

ADDITIONAL NOTES ON THE ERIOCAULACEAE. XXV

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ERIOCAULON ALATUM H. Lecomte

This taxon is now reduced to synonymy under E. zollingerianum Körn., which see.

ERIOCAULON ALPINUM Van Royen

Additional bibliography: Moldenke, Bull. Jard. Bot. Brux. 27: 130. 1957; Van Royen, Nov. Guin., new ser., 10: 24, [27], 39-40, & 44, fig. 1a. 1959; Moldenke, Phytologia 17: 453 (1968) and 19: 14. 1969.

Illustrations: Van Royen, Nov. Guin., new ser., 10: [27], fig. 1a. 1959.

Van Royen (1959) cites Brass 9226 from Lake Habbema, New Guinea, in the Rijksherbarium at Leiden, as the type of this endemic species. He also cites Brass & Meyer Drees 9956 from the same island and says that the species inhabits "marshy slopes at high altitudes". He further remarks that "Originally the specimens mentioned above have been identified by H. Moldenke as E. brevipedunculatum Merrill, but this is certainly an error since in that species the receptaculum bears long white hairs and the sepals of either type of flower are greenish or yellowish, while in E. alpinum the receptaculum is glabrous and the sepals are blackish. Moreover the sepals of the female flowers are free in E. brevipedunculatum and in the present species they are tubuliformly united with the two lateral sepals free from each other. The petals in the male flowers are acute and almost equal, while in E. brevipedunculatum they are obtuse and distinctly unequal. Also, the petals of the female flowers are glabrous at the inside while those of the Philippine species have long white hairs there. Finally the leaves have more than 10 nerves, those of E. brevipedunculatum 6 to 9 and the involucrel bracts are glabrous in the present species while in the other they have white hairs at the apex. The present species shows a clear resemblance to E. montanum Van Royen but differs from that species by the many nerves of the leaves and by the black sepals of either type of flowers and the united sepals of the female flowers."

Citations: MELANESIA: NEW GUINEA: Dutch New Guinea: Brass 9226 (N--isotype); Brass & Meyer-Drees 9956 (N); Hoogland & Schodde 7031 (W-2393235). Northeastern New Guinea: M. S. Clemens 5584 (N), 7409 (B, N), 9368 (N), 9942 (B, N).

ERIOCAULON AMBOENSE Schinz

Additional bibliography: Moldenke, Phytologia 19: 15 & 46. 1969.

According to a letter from Dr. A. Schreiber, dated July 31,

1969, Dr. Roeszler feels that Bleissner 90 and Giess, Volk, & Bleissner 5862 in the Munich herbarium are actually young or undeveloped specimens of E. amboense. In deference, therefore, to the opinion of this noted expert on the southwest African flora, I will tentatively concur in this determination, although the specimens in question certainly do not resemble very much any other material of this species which I have thus far seen.

Additional citations: SOUTHWEST AFRICA: Giess, Volk, & Bleissner 5862 (Z).

ERIOCAULON ARFAKENSE Van Royen

Bibliography: Van Royen, Nov. Guin., new ser., 10: 23, 26—28, & 44, fig. 1b. 1959.

Illustrations: Van Royen, Nov. Guin., new ser., 10: [27], fig. 1b. 1959.

The type of this species is Anta 222 from Tamurik Camp, in the Manokwari District, western New Guinea, deposited in the Rijks-herbarium at Leiden. Van Royen (1959) states that the species grows among grasses in swamps at low altitudes and is endemic to New Guinea. He notes further that "This species differs from all species in Eriocaulon by the absence of sepals in both types of flowers and by the two stamens. The absence of sepals in the male flowers this species has in common with E. heterogynum F. Muell., but it differs from that species by the two stamens. The absence of sepals in the female flowers this present species has in common with no other species in Eriocaulon. The specific epithet is derived from the Arfak Mountains, the area in which this species is collected for the first time."

ERIOCAULON ARUPENSE Van Royen

Bibliography: Van Royen, Nov. Guin., new ser., 10: 23, [27], 33—34, & 44, fig. 1c. 1959.

Illustrations: Van Royen, Nov. Guin., new ser., 10: [27], fig. 1c. 1959.

This species is based on "NGEW 3067" from Wissel Lakes, altitude 1750 meters, in west-central New Guinea, deposited in the Rijksherbarium at Leiden. Van Royen (1959) states that the species is endemic to New Guinea, inhabiting swamps at high altitudes, and bears the vernacular name "dariwoerie". He remarks that it is "Closely related to E. leucogenes Ridley but differing by the much longer leaves, peduncles and sheathes, and by the dark central patch of the floral bracts. The specific epithet is derived from the name of the area Arupa, in which the species has been collected for the first time."

ERIOCAULON AUSTRALE R. Br.

Additional bibliography: Van Royen, Nov. Guin., new ser., 10: 23, [27]—29, & 44, fig. 1d. 1959; Moldenke, Phytologia 19: 18—19. 1969.

Additional illustrations: Van Royen, Nov. Guin., new ser., 10:

[27], fig. ld. 1959.

Van Royen (1959) states that this species is found "In periodically flooded grassy plains and meadows, and in Melaleuca swamps. Usually on sandy ill-drained soils of areas at low altitudes" in New Guinea, where it is known as "baha baha". He cites from Dutch New Guinea: Anto 208, Branderhorst 92, "NGBW" 2861, and Van Royen 4871 & 4872, from Northeastern New Guinea: Womersley NGF 9344 & 9353, and from Papua: Brass 5751 & 5752.

ERIOCAULON BATAVORUM Van Royen

This name belongs in the synonymy of E. oreadum Van Royen, which see.

ERIOCAULON BRACHYPELON Körn.

Additional bibliography: Van Royen, Nov. Guin., new ser., 10: 23, [27], 29, & 44, fig. lf. 1959; Moldenke, Phytologia 19: 20. 1969.

Illustrations: Van Royen, Nov. Guin., new ser., 10: [27], fig. lf. 1959.

Van Royen (1959) affirms that the type and only known collection of this species is deposited in the herbarium of the Botanischer Museum at Berlin.

ERIOCAULON BREVIPELUNCULATUM Merr.

Additional bibliography: Van Royen, Nov. Guin., new ser., 10: 35, 37, 39, 40, & 44. 1959; Moldenke, Phytologia 19: 20--21 & 23. 1969.

ERIOCAULON CINEREUM R. Br.

Additional bibliography: Van Royen, Nov. Guin., new ser., 10: 22, 23, 25--26, 30, & 44, fig. 2g. 1959; Moldenke, Phytologia 19: 25--26 & 38. 1969.

Additional illustrations: Van Royen, Nov. Guin., new ser., 10: 30, fig. 2g. 1959.

Van Royen (1959) gives the overall distribution of this species as "Central Africa, South Africa, India, Ceylon, Japan and China to Northern Australia" and notes "Not yet known from New Guinea, but since in the surrounding islands it is found in Java, Madura, the Philippines and Northern Australia this species is likely to be met there in the future."

ERIOCAULON DEPRESSUM R. Br.

Additional bibliography: Körn., Linnaea 27: 587. 1856; F. Muell., Census, ed. 2, 207. 1889; F. M. Bailey, Queensl. Fl. 6: 1717. 1902; F. M. Bailey, Compreh. Cat. Queensl. Fl. 584. 1913; Ewart & Cookson in Ewart & Davies, Fl. N. Terr. 67. 1917; Van Royen, Nov. Guin., new ser., 10: 24 & 44. 1959; Moldenke, Phytologia 19: 34. 1969.

Van Royen (1959) cites Körnicke's work as "1854", but the part concerned here was not issued until 1856.

ERIOCAULON GIBBOSUM var. LONGIFOLIUM Körn.

Bibliography: Körn. in Mart., Fl. Bras. 3 (1): 489—490. 1863; Moldenke, Phytologia 18: 93—94. 1969.

In my previous publications I regarded this variety as invalid, but on examining more material I am now not so sure. Possibly it is worth maintaining. It was based by Körnicke (1863) on five specimens: G. Gardner 4383 from Minas Gerais, Lund s.n. [in ripa rivuli Uberava, Julio] from Minas Gerais, L. Riedel 2416 from Goiás, Vauthier s.n. [in Brasilia orientali], and Weddell 2128 from Goiás, Brazil. He describes it as "foliis longioribus, 9—15-nerviis, 10—27 lin. longis, medio 1—1 3/4 lin. latis". The Munich sheet of L. Riedel 2416, however, has only short leaves, so this collection number may represent a mixture. Another possibility is that larger leaves may have been lost from the Munich plant before it was collected (or mounted). More study is needed before it can be determined definitely if Körnicke's variety is a valid one. Luetzelburg gathered it on dry granite.

Citations: BRAZIL: Bahia: Luetzelburg 659a (Mu). Goiás: Weddell 2128 [4] (Br—cotype, N—cotype, N—photo of cotype, Z—photo of cotype).

ERIOCAULON HETEROGYNUM F. Muell.

Additional bibliography: Van Royen, Nov. Guin., new ser., 10: 23—25, 30, & 44, fig. 2h. 1959; Moldenke, Phytologia 19: 45—46. 1969.

Illustrations: Van Royen, Nov. Guin., new ser., 10: 30, fig. 2h. 1959.

Van Royen (1959) cites Van Royen 4873 from Dutch New Guinea, where, he says, the species grows on grassy plains in periodically flooded savannas at low altitudes. He gives "Eriocaulon depressum R. BR. in SMITH in REES Encycl. 13 (1809)" as a synonym of E. heterogynum. He dates Mueller's work as "1858", but the part concerned here was actually not published until 1859.

ERIOCAULON HEUDELII N. E. Br.

Additional bibliography: Moldenke, Phytologia 19: 15 & 46. 1969.

Additional citations: ZAMBIA: E. A. Robinson 3471 (Mu). SOUTH-WEST AFRICA: Baum 111 (Mu—376, Z); Giess & Leippert 7603 (Mu).

ERIOCAULON HILDEBRANDTII Körn.

Additional bibliography: Stapf, Ind. Lond. 3: 90. 1930; Moldenke, Phytologia 18: 181. 1969.

Additional citations: MADAGASCAR: Hildebrandt 3598 (Mu—iso-type).

ERIOCAULON HONDOENSE Satake

Additional & emended bibliography: Moldenke, Phytologia 18: 181—185, 310, 311, & 441. 1969.

The Furuse s.n. [Sara-mma, 6 Oct. 1955], distributed as E.

hondoense, is actually E. miquelianum Körn.

Additional & amended citations: WESTERN PACIFIC ISLANDS: JAPAN: Hokkaido: Maximowicz s.n. [Hakodate, 1861] (B, Br, S). Honshu: Furuse s.n. [22 Sept. 1957] (Ac); C. Hashimoto 399 (Se—147243); Ohwi & Koyama 1124 (Se—167546); Togasi 722 (Ca—22981, Mg, M1, S, Se—161451, Vi), 914 (B, Mg, S, Se—159496), 1101 (Mg, S, Se—164166).

ERIOCAULON HOOKERIANUM Stapf

Additional synonymy: Eriocaulon hookerianum var. hookerianum Van Royen, Nov. Guin., new ser., 10: 29—31, fig. 21. 1959.

Additional & amended bibliography: H. Lecomte, Journ. de Bot. 21: 89, 91, & [101]. 1908; H. Lecomte, Fl. Gén. Indo-Chine 7: 2 & 10—11. 1912; H. N. Ridl., Journ. Fed. Malay States Mus. 6: 191 & 192. 1915; H. N. Ridl., Fl. Mal. Penins. 5: 135, fig. 218. 1925; Van Royen, Nov. Guin., new ser., 10: 23, 29—31, 33, & 44. 1959; Van Royen, Flumea 10: 128 & 134. 1960; Moldenke, Phytologia 18: 185—187 & 303. 1969.

Illustrations: H. N. Ridl., Fl. Mal. Penins. 5: 135, fig. 218. 1925; Van Royen, Nov. Guin., new ser., 10: 30, fig. 21. 1959.

Ramaswamy found this plant growing in marshy areas near paddy fields and says "Heads numerous, black and have a large number of female flowers. The associated plants were (a) Utricularia, (b) Drosera, etc. Streiman & Kairo describe it as a small erect herb, 1 foot tall, with dull-green leaves and white flowers, growing at 5000 feet altitude in wet areas with Cyperaceae and Xyris, flowering and fruiting in April. The Clemenses found it flowering and fruiting in January.

The name, E. beccarii Ruhl., was apparently based on Beccari 2420 in the Berlin herbarium, one of the collections which was made a cotype of E. beccarii Suesseng. & Heine later on, along with Clemens & Clemens 27813 & 32629.

Van Royen (1959) cites Kostermans 2343 from Dutch New Guinea, where, he says, the species inhabits swamps along sides of lakes at high altitudes. He gives its overall distribution as "Malay Peninsula, Borneo, New Guinea."

Additional citations: INDIA: Mysore: Ramaswamy 2 (Rf). INDO-NEسيا: GREATER SUNDA ISLANDS: Borneo: Beccari 2420 (Mu—354). Sabah: Clemens & Clemens 27813 (Mu), 32629 (Mu). MELANESIA: NEW GUINEA: Northeastern New Guinea: Streimann & Kairo NGF.35677 (Mu).

ERIOCAULON HOOKERIANUM var. MICROPHYLLUM Van Royen

Bibliography: Van Royen, Nov. Guin., new ser., 10: 23, 30, 33, & 44, fig. 2j. 1959.

Illustrations: Van Royen, Nov. Guin., new ser., 10: 30, fig. 2j. 1959.

The type of this variety is Kostermans 2127 from Angi Gita Lake, at 1900 meters altitude, in the Arfak Mountains of western

New Guinea, deposited in the Rijksherbarium at Leiden. Van Royen (1959) describes the variety as differing from the typical form of the species "in the much smaller, obtuse leaves, 8—12 (—35) by 1—2.5 mm, the shorter peduncles, 1.5—11 (—16) cm., the smaller heads, the almost glabrous receptaculum and the smaller sizes of all organs. In the male flowers the petals sometimes have no glands or only some of them are absent." He regards it as endemic to New Guinea and says that it grows "in heath vegetation or in swamps, at high altitudes". He cites also Eyma 4798 and Gjellerup 1126 from Dutch New Guinea, and Robbins 173 & 261 from Northeastern New Guinea.

ERIOCAULON HUMBOLDTII Kunth

Emended synonymy: Eriocaulon decangulare Willd. ex Kunth, Enum. Fl. 3: 544, in syn. 1841 [not E. decangulare Hill, 1799, nor Hope, 1770, nor Huds., 1959, nor Hull, 1841, nor L., 1753, nor Lightf., 1777, nor Michx., 1959, nor Walt., 1788].

Additional & emended bibliography: C. Müll. in Walp., Ann. 5: 931 (1860) and 6: 1171. 1861; Aristeguieta, Act. Bot. Venez. 3: 25, 36, & 37. 1968; J. A. Steyerl., Act. Bot. Venez. 3: 96. 1968; Moldenke, Phytologia 18: 187—189 & 269. 1969.

Pursell, Curry, & Kremer found this plant growing "in standing water" in Venezuela.

Additional citations: VENEZUELA: Bolívar: Wurdack & Monachino 39962 (Mu), 41173 (Se—166856). Monagas: Pursell, Curry, & Kremer 8310 (N).

ERIOCAULON INTERMEDIUM Körn.

Emended synonymy: Eriocaulon setaceum Kunth apud C. Müll. in Walp., Ann. 5: 931, in syn. 1860 [not E. setaceum Auct. ex Backer & Bakh., 1968, nor Benth., 1893, nor Crantz, 1893, nor Heyne, 1832, nor L., 1753, nor Lour., 1790, nor Rottl., 1960, nor Wall., 1893, nor Wight, 1832, nor Willd., 1959]. Eriocaulon setaceum Hook. f. ex Moldenke, Résumé 292, in syn. 1959.

Additional & emended bibliography: C. Müll. in Walp., Ann. 5: 925 & 931 (1860) and 6: 1171. 1861; H. Lecomte, Journ. de Bot. 21: 89 & 90. 1908; H. Lecomte, Fl. Gén. Indo-Chine 7: 2 & 4—5. 1912; Moldenke, Phytologia 18: 243—244, 280, 429, & 433 (1969) and 19: 38. 1969.

Lecomte (1912) differentiates this species from the very similar E. setaceum L. as follows: "capitules glabres — E. intermedium; capitules blancs, velus — E. setaceum".

The Clemens & Clemens 4214, distributed as E. intermedium, is actually E. setaceum L.

Additional citations: INDIA: Travancore: R. Wight 2369, in part (C).

ERIOCAULON INTRUSUM Meikle

Additional bibliography: Moldenke, Phytologia 18: 244—245. 1969; Anon., Assoc. Stud. Tax. Fl. Afr. Trop. Index 1968: 24.

1969.

ERIOCAULON IRREGULARE Meikle

Additional bibliography: Moldenke, Phytologia 18: 245 & 393. 1969; Anon., Assoc. Etud. Tax. Fl. Afr. Trop. Index 1968: 25. 1969.

ERIOCAULON JAPONICUM Körn.

Additional bibliography: Iinouma, Somoku Dzusetsu, ed. 2, 17: pl. 49. 1874; Stapf, Ind. Lond. 3: 90. 1930; Moldenke, Phytologia 18: 246. 1969.

Illustrations: Iinouma, Somoku Dzusetsu, ed. 2, 17: pl. 49. 1874.

ERIOCAULON JORDANI (Moldenke) Meikle

Additional bibliography: Moldenke, Phytologia 18: 247. 1969; Anon., Assoc. Etud. Tax. Fl. Afr. Trop. Index 1968: 25. 1969.

ERIOCAULON KINABALUENSE Van Royen

Synonymy: Eriocaulon brevipedunculatum Suesseng. & Heine apud Van Royen, Blumea 10: 133, in syn. 1933 [not E. brevipedunculatum Merr., 1907].

Additional & emended bibliography: E. D. Merr., Bibl. Enum. Born. Pl. 110. 1921; Moldenke, Bull. Jard. Bot. Brux. 27: 130. 1957; Van Royen, Blumea 10: 128, 129, & 133--134, fig. 1F. 1960; D. N. F. Kiehl, Blumea 10: 657. 1960; Moldenke, Phytologia 17: 453 (1968), 18: 248 (1969), and 19: 21. 1969.

Illustrations: Van Royen, Blumea 10: 129, fig. 1F. 1960.

The type of this species was collected by the late Mary Knapp Clemens (no. 10611) on the way from Paka Cave to Low's Peak, Mount Kinabalu, Sabah, on November 13, 1915. Van Royen (1960) cites also Clemens & Clemens 27089, 27777, 32336, & 51120. In the past this species was confused with the Philippine E. brevipedunculatum Merr. by Merrill himself and, later, by Suessenguth & Heine and by me. The two taxa are certainly very closely related and are very similar in general habit. Van Royen says of his species "In habit closely related to E. brevipedunculatum Merr., but differing from that species by the pubescent involucral bracts, the long white hairs on the stem and on the inside of the male flowers". Suessenguth & Heine, however, have a special notation on the Munich sheet of Clemens & Clemens 27089 saying "Brakteen kahl!"

The species has been collected at 11,000 to 13,000 feet altitude, growing in mats on a granite dome, in shelter of the boulders below ice sheets, the inflorescence described as gray or brown when fresh, flowering and fruiting in January, May, June, and November. The Haslam s.n. cited by Merrill (1921) is probably also this species

Citations: INDONESIA: GREATER SUNDA ISLANDS: Sabah: M. K. Clemens 10504 (Ca--214441), 10611 (Ca--214439--isotype, Z--iso-

type); Clemens & Clemens 27089 (N), 27777 (N), 27089 (Mu), 30059 (N), 32336 (Ca--541311, N), 51120 (Ca--557560).

ERIOCAULON KIUSIANUM Maxim.

Additional & emended bibliography: Maxim., Dec. Fl. Asiat. 8: 22. 1893; Mak., Bot. Mag. Tokyo 8: 506 & 507. 1894; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 1, 158 (1902) and 501. 1906; Moldenke, Phytologia 18: 249. 1969.

The original Maximowicz publication (1893) of this taxon was incorrectly cited by Durand & Jackson (1902) to Bull. Acad. Sci. St.-Petersb., as it was also by me in a previous installment (1969) of these notes. The evidence seems to be conclusive that this part of Maximowicz's work was only issued separately.

The Liang 66137, cited by me earlier in these notes, is a mixture with E. sinii Ruhl.

Additional citations: FORMOSA: Tanaka & Shimada 13574 (Mu).

ERIOCAULON KLOTZSCHII Moldenke

Additional & emended bibliography: C. Müll. in Walp., Ann. 5: 931 (1860) and 6: 1170. 1861; Moldenke, Phytologia 18: 249--250 & 376. 1969.

ERIOCAULON KLOTZSCHII var. PROLIFERUM (Moldenke) Moldenke

Additional bibliography: Moldenke, Phytologia 18: 250. 1969.

Additional citations: VENEZUELA: Amazonas: Maguire & Wurdack 34595 (Mu--isotype).

ERIOCAULON KOERNICKEI Britten

Additional & emended bibliography: Körn. in Mart., Fl. Bras. 3 (1): 475, 477--478, & 500, pl. 60, fig. 2. 1863; Stapf, Ind. Lond. 3: 91. 1930; Moldenke, Phytologia 18: 250 & 428. 1969.

Emended illustrations: Körn. in Mart., Fl. Bras. 3 (1): pl. 60, fig. 2. 1863.

ERIOCAULON KUNTHII Körn.

Additional & emended bibliography: C. Müll. in Walp., Ann. 5: 930 (1860) and 6: 1171. 1861; Wettst., Veg. Südbras. pl. 56 & 57. 1904; Wettst., Handb. Syst. Bot., ed. 2, 814. 1911; Stapf, Ind. Lond. 3: 90. 1930; Moldenke, Phytologia 18: 253--255, 265, 266, 276, & 277. 1969.

Illustrations: Wettst., Veg. Südbras. pl. 56 & 57. 1904; Wettst., Handb. Syst. Bot., ed. 2, 814. 1911.

Bornmüller found this plant scattered in marshy campos, at 500 meters altitude, flowering and fruiting in September.

Additional citations: BRAZIL: Rio Grande do Sul: Bornmüller 591 (Mu--412, Mu--413).

ERIOCAULON LANATUM H. Hess

Additional & emended bibliography: H. Hess, Bericht. Schweiz. Bot. Gesell. 65: 137--139 & 145, pl. 8, fig. 1, 2, & 4. 1955; E. Müll., Phytopath. Zeitschr. 23: 108. 1955; [Wiltshire], Rev.

Appl. Myc. Ind. Fungi 2: 356, 359, & Cum. Ind. 202. 1963; Moldenke, Phytologia 18: 256—257. 1969.

Müller (1955) describes the fungus, Tolyposporium hessii, from the ovaries of this species of pipewort in Angola.

ERIOCAULON LANCEOLATUM Miq.

Additional & emended bibliography: C. Müll. in Walp., Ann. 5: 926 & 942 (1860) and 6: 1171. 1861; Fyson, Journ. Indian Bot. 2: 264 & 266, pl. 23. 1921; Moldenke, Phytologia 18: 257 & 444. 1969.

Additional citations: INDIA: Kerala: Hohenacker 131 [Pl. Exsicc. Metz. 131] (Mu—209—cotype, Mu—cotype, Mu—cotype); Stocks, Law & s.n. [Malabar, Concan &.] (Mu—210).

ERIOCAULON LANIGERUM H. Lecomte

Additional bibliography: H. Lecomte, Fl. Gén. Indo-Chine 7: 2 & 8—9. 1912; Moldenke, Phytologia 18: 258. 1969.

ERIOCAULON LATIFOLIUM J. Sm.

Additional & emended bibliography: J. E. Sm. in Rees, Cycl. 13: Eriocaulon. 1809; Walp., Ann. 3: 663 (1852) and 3: 1014. 1853; C. Müll. in Walp., Ann. 6: 1171. 1861; Rendle, Cat. Afr. Pl. Welw. 2 (1): 102. 1899; Moldenke, Phytologia 18: 258—259. 1969.

Rendle (1899) tells us that E. stoloniferum Welw. is closely related to this species (which he refers to as E. rivulare G. Don).

Additional citations: DEMOCRATIC REPUBLIC OF CONGO: Devred 2116 (Mu).

ERIOCAULON LAXIFOLIUM Körn.

Additional & emended bibliography: C. Müll. in Walp., Ann. 5: 931 (1860) and 6: 1171. 1861; Moldenke, Phytologia 18: 259—260. 1969.

The Martius 1499 collection, which is the type of Eriocaulon laxifolium Körn., is also the type of Paepalanthus laxifolius Mart., the latter name apparently based on the specimen preserved in the Munich herbarium.

Additional citations: BRAZIL: Minas Gerais: Martius 1499 [Macbride photos 18687] (Mu—211—type), s.n. [Brasília prov. Minarum] (Mu—282).

ERIOCAULON LEPTOPHYLLUM Kunth

Additional & emended bibliography: C. Müll. in Walp., Ann. 5: 931 (1860) and 6: 1171. 1861; Moldenke, Phytologia 18: 260—261 & 316. 1969.

Additional citations: BRAZIL: Paraná: Reitz & Klein 17618 (N).

ERIOCAULON LEUCOGENES Ridl.

Additional bibliography: Van Royen, Nov. Guin., new ser., 10: 23, 32—35, & 44, fig. 3L. 1959; Moldenke, Phytologia 18: 261—

262. 1969.

Illustrations: Van Royen, Nov. Guin., new ser., 10: 32, fig. 3L. 1959.

Van Royen (1959) cites Boden Kloss s.n. from between 1000 and 1500 meters altitude in the Carstensz range near the Tsingaron and Bandarong rivers in Dutch New Guinea, deposited in the herbarium of the British Museum. He regards the species as endemic to New Guinea, where he says that it grows "On open ridges at high altitudes".

ERIOCAULON LEUCOMELAS Steud.

Additional & emended synonymy: Eriocaulon horsely-kundae Fyson, Fl. Nilg. & Puln. Hill-tops 3: 119. 1921. Eriocaulon horsley-kundae Fyson, Journ. Indian Bot. 2: 261, hyponym (1921) and 3: 14, pl. 44. 1922. Eriocaulon horsley-kundae megalocepalum Fyson apud Stapf, Ind. Lond. 3: 91. 1930. Eriocaulon horsley-kondae var. megalocepala Fyson apud C. E. C. Fischer in Gamble, Fl. Presid. Madras, ed. repr. 2, 8 [3]: 1127, in syn. 1956.

Additional bibliography: Fyson, Fl. Nilg. & Puln. Hill-tops 1: 428 & 432 (1915), 2: pl. 277 (1915), and 3: 119, pl. 543. 1921; Fyson, Journ. Indian Bot. 2: 196 & 261. 1921; Stapf, Ind. Lond. 3: 90. 1930; Moldenke, Phytologia 18: 262--265, 316, 349, 361, 362, & 439 (1969) and 19: 11. 1969.

Additional illustrations: Fyson, Fl. Nilg. & Puln. Hill-tops 2: pl. 277 (1915) and 3: pl. 543. 1921.

This species of pipewort has been collected at 6000 feet altitude, in flower and fruit in November.

Fyson (1915) describes his E. geoffreyi as follows: "I 47. Scapes solitary, very slender, 2 to 5 inches: sheath 1/2 inch, with scarious bifid mouth. Leaves 1/2 to 1 1/4 inches, flat, acute, about nine-nerved, often recurved. Heads 1/4 inch, white with the hairs of the male petals. Involucral bracts black, glabrous. Receptacle glabrous. Floral bracts obovate-cuspidate, black with thick white hairs on the back and upper margin. Male flowers:-- Sepals black, united into a spathe, split down the front. Corolla tube slender tapering downwards, enlarged above and cup-shaped; petals subequal with long thick white hairs and large black glands. Female flowers:-- Sepals boat-shaped. Petals oblanceolate with fine long white hairs nearly to the base. t. 277. On damp ground. Pulney hills. South India 7,500 feet. Fyson 2165, 2085. Not known elsewhere. The solitary scapes and stiff often recurved leaves are very characteristic." In his 1921 work he adds: "Vol. I p. 432, II, t. 277. Grows on bare patches on the hill sides during rainy weather (September, etc.) solitary; not tufted, and not in swamps." In the same work, for his so-called E. horsely-kundae var. megalocepala, he says "(to be described in the Records of the Botanical Survey of India). A small plant with the habit of E. Geoffreyi but with larger white heads, and differs from all our other species in the anthers being white or yellowish. t. 543. Nilgiris: Ootacamund on

slopes of Snowden. Flr. September. Fyson 6560. Coonoor, etc." The reference to volume 3 of this author's work is sometimes cited as "1920" (the titlepage date), but it was not actually issued until 1921. Stapf (1930) falls into this error.

Material of E. leucomelas has been misidentified and distributed in herbaria as E. cristatum Mart.

Additional citations: INDIA: Madras: Bambower 431 (Ca—495796, N). Mysore: Meebold 9735 (S).

ERIOCAULON LIGULATUM (Vell.) L. B. Sm.

Additional & emended bibliography: C. Müll. in Walp., Ann. 5: 930 (1860) and 6: 1171. 1861; Moldenke, Phytologia 18: 254, 265—266, & 276. 1969.

Jackson (1893) dates Körnicke's work as "1854", but the part concerning us here was actually not published until 1856.

Additional citations: BRAZIL: Minas Gerais: Regnell II.291 [2/9/1861; Macbride photos 10567] (Mu—366).

ERIOCAULON LINEARE Small

Additional bibliography: Thorne, Am. Midl. Nat. 52: 281. 1954; Moldenke, Phytologia 18: 266—269, 379—381, & 437 (1969), and 19: 32. 1969.

The A. Gray s.n. cited below was annotated as "Eriocaulon flavidulum Michx." by Körnicke and may well be the basis of his taxon of that name recognized by him in his monograph of the family as distinct from Syngonanthus flavidulus (Michx.) Ruhl.

The Meebold 28097, distributed as E. lineare, is actually E. decangulare L., while his 28099 is a mixture of Syngonanthus flavidulus (Michx.) Ruhl. and Lachnocaulon glabrum Körn., 28100 is Eleocharis geniculata (L.) Roem. & Schult. in the Cyperaceae, and 28105 is Syngonanthus flavidulus.

Additional citations: GEORGIA: County undetermined: A. Gray s.n. (Mu—204).

ERIOCAULON LINEARIFOLIUM Körn.

Additional & emended bibliography: C. Müll. in Walp., Ann. 5: 931 (1860) and 6: 1171. 1871; Moldenke, Phytologia 18: 269. 1969.

Additional citations: BRAZIL: State undetermined: Sidney 1325 [Onishi 546; Surucucu] (Z).

ERIOCAULON LONGICUSPE Hook. f.

Additional & emended bibliography: Fyson, Journ. Indian Bot. 2: 308—310 & 312. 1921; Moldenke, Phytologia 18: 269—270, 395, & 396 (1969) and 19: 44. 1969.

The Meebold 9737, distributed as E. longicuspe, is actually E. polycephalum Hook. f.

ERIOCAULON LONGIPEDUNCULATUM H. Lecomte

Additional bibliography: Moldenke, Phytologia 18: 270, 326, 327, & 367 (1969) and 19: 28. 1969.

ERIOCAULON LONGIPETALUM Rendle

Additional & emended bibliography: Rendle, Cat. Afr. Pl. Welw. 2 (1): 96—97. 1899; Engl. & Drude, Veget. Erde 9 (2): 265. 1908; Stapf, Ind. Lond. 3: 91. 1930; Moldenke, Phytologia 18: 270—271. 1969.

Additional illustrations: Engl. & Drude, Veget. Erde 9 (2): 265. 1908.

The type collection of this species, Walwitsch 2446, was found growing almost immersed in sticky mucous derived from algae on the boggy heights of Morro de Lopollo, Angola, in the middle of May, 1860, and the original labels of the collector definitely state that this is in the province of Huila. What was the basis of Ruhland's citing of the collection to Benguela province is not apparent to me.

Rendle (1899) calls the species "A distinct little species characterised by its dense congested habit and the long protruding petal of the female flowers....A dwarf plant with the facies of Juncus pygmaeus, congested rosulate radical leaves, crowded scapes shorter than or equal to the leaves, and small whitish-greenish flower-heads."

Additional citations: ANGOLA: Huila: Walwitsch 2446 (Mu—isotype).

ERIOCAULON LUZULAEFOLIUM Mart.

Additional & emended bibliography: Schnitzl., Iconogr. 1: pl. 46. 1845; C. Müll. in Walp., Ann. 5: 926 & 938 (1860) and 6: 1171. 1861; C. H. Wright, Journ. Lim. Soc. Lond. Bot. 36: 199—200. 1903; Hosseus, Beih. Bot. Centralbl. 28 (2): 369—371. 1911; Hayata, Icon. Pl. Formos. 10: 272. 1921; Stapf, Ind. Lond. 3: 91. 1930; Moldenke, Phytologia 18: 272—274, 348, 349, 362, & 396. 1969.

Additional illustrations: Schnitzl., Iconogr. 1: pl. 46. 1845.

Hosseus found this plant growing in moors, scattered, at 1050 meters altitude, in flower and fruit in April. Material has been misidentified and distributed in herbaria as E. truncatum Hamilt. On the other hand, the Hooker & Thomson s.n. [Mont. Khasia, 0—6000 ped.], distributed as E. luzulaefolium, is actually E. truncatum Hamilt.

Additional citations: NEPAL: Bruce s.n. [Wallich 6071] (Mu—214—type, Mu—329—isotype, Mu—340—isotype); Poelt s.n. [4.9. 1962] (Mu). INDIA: Assam: Jenkins s.n. [Assam] (Mu—310). THAILAND: Hosseus 492 (Mu—404); Lindhard s.n. [8 Jan. 1904] (Mu—405).

ERIOCAULON MACROBOLAX Mart.

Additional & emended bibliography: C. Müll. in Walp., Ann. 5: 930 (1860) and 6: 1171. 1861; Körn. in Mart., Fl. Bras. 3 (1): 484—485, pl. 62, fig. 3. 1863; Stapf, Ind. Lond. 3: 91. 1930; Moldenke, Phytologia 18: 274—275. 1969.

Illustrations: Körn. in Mart., Fl. Bras. 3 (1): pl. 62, fig.

3. 1863.

ERIOCAULON MACROPHYLLUM Ruhl.

Additional bibliography: H. N. Ridl., Journ. Fed. Malay States Mus. 6: 191 & 192. 1915; Moldenke, Phytologia 18: 275. 1969.

ERIOCAULON MAGNIFICUM Ruhl.

Additional bibliography: Griffith & Hyland, U. S. Dept. Agr. Fl. Inventory 166: 184 & 386. 1966; Moldenke, Phytologia 18: 254, 276, & 342. 1969.

Griffith & Hyland (1966) record this species as introduced and presumably cultivated in Maryland as plant introduction no. 247175, the seeds having been collected by Ll. Williams as his no. 18945 in Rio Grande do Sul, Brazil, where he reports that the plant was growing at 35 feet altitude, the scapes to 18 inches tall, and the flowering heads white, half an inch in diameter.

ERIOCAULON MAGNIFICUM var. GOYAZENSE Moldenke

Bibliography: Moldenke, Phytologia 18: 342. 1969.

Citations: BRAZIL: Goiás: Heringer & Lima 11717 (Z--type).

ERIOCAULON MAGNUM Abbiatti

Additional bibliography: Moldenke, Phytologia 18: 276—277. 1969.

Cabrera describes the flowers, by which he means the inflorescence heads, as white.

Additional citations: ARGENTINA: Corrientes: A. L. Cabrera 11698 (Mu).

ERIOCAULON MAJUSCULUM Ruhl.

Synonymy: Eriocaulon maiusculum Ruhl. apud Stapf, Ind. Lond. 3: 91. 1930.

Additional bibliography: Stapf, Ind. Lond. 3: 91. 1930; Moldenke, Phytologia 18: 254 & 277. 1969.

Luetzelburg found this plant growing in high moors.

Additional citations: BRAZIL: Rio de Janeiro: Luetzelburg 6338a (Mu), 6338b (Mu).

ERIOCAULON MAMFEËNSE Meikle

Additional bibliography: Moldenke, Phytologia 18: 277—278. 1969; Anon., Assoc. Etud. Tax. Fl. Afr. Trop. Index 1968: 25. 1969.

ERIOCAULON MELANOCEPHALUM Kunth

Additional & emended bibliography: C. Müll. in Walp., Ann. 5: 931 (1860) and 6: 1171. 1861; Körn. in Mart., Fl. Bras. 3 (1): 476 & 498—500, pl. 63. 1863; Beauverd, Bull. Herb. Boiss., sér. 2, 8: 284, 286, & 287. 1908; Stapf, Ind. Lond. 3: 91. 1930; Moldenke, Phytologia 18: 243, 279—280, & 301. 1969; Moldenke, Biol. Abstr. 50: 7996. 1969.

Emended illustrations: Körn. in Mart., Fl. Bras. 3 (1): pl.

63. 1863.

The E. A. Robinson 3759, distributed as this species, is actually E. bifistulosum Van Haurck & Muell.-Arg.

ERIOCAULON MELANOCEPHALUM subsp. USTERIANUM Beauverd

Emended synonymy: Eriocaulon usterianum Beauverd, Bull. Herb. Boiss., sér. 2, 8: 284—287, fig. 9B. 1908.

Additional & emended bibliography: Beauverd, Bull. Herb. Boiss., sér. 2, 8: 284—287, fig. 9B. 1908; Stapf, Ind. Lond. 3: 91. 1930; Moldenke, Phytologia 18: 301—302. 1969.

Illustrations: Beauverd, Bull. Herb. Boiss., sér. 2, 8: 285, fig. 9B. 1908.

Beauverd (1908) actually seems to accept the name, E. usterianum, for this taxon; on p. 284 of his work he merely gives E. melanocephalum subsp. usterianum as a "nom. alt." for it. Under a strict interpretation of the International Rules in their present state, I suppose, both of these names would be invalidated, or, at the very least, the one here accepted.

ERIOCAULON MERRILLII Ruhl.

Additional & emended synonymy: Eriocaulon merrillii Ruhl. apud Hayata, Icon. Pl. Formos. 3: 197. 1913. Eriocaulon sollyanum var. sumatranum Van Royen, Blumea 10: 135. 1960.

Additional & emended bibliography: Hayata, Icon. Pl. Formos. 10: 272. 1921; Sasaki, Cat. Govt. Herb. 118. 1930; Van Royen, Blumea 10: 135. 1960; D. N. F. Kiehl, Blumea 10: 657. 1960; Moldenke, Phytologia 18: 186, 302, & 438. 1969.

The trinomial, E. sollyanum var. sumatranum, is based on a collection made by H. A. B. Bünnemeijer (no. 8950) in Sumatra. Van Royen (1960) also cites as the same taxon H. H. Bartlett 7457, Boeea 5963, 6008, & 10343, Bünnemeijer 5203 & 5763, Jung-huhn s.n., Lörzing 6729, and Robinson & Klose s.n. from the same island.

The E. D. Merrill 293, distributed as E. merrillii, is actually E. cinereum R. Br.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Mindanao: M. K. Clemens 909 (Mu—390). INDONESIA: GREATER SUNDA ISLANDS: Sumatra: Boeea 5963 (N), 6008 (N).

ERIOCAULON MICROCEPHALUM H.B.K.

Emended synonymy: Eriocaulon microcephalum Kunth apud Poir. in Cuvier, Dict. Sci. Nat. 24: 241. 1822.

Additional & emended bibliography: Poir. in Cuvier, Dict. Sci. Nat. 24: 241. 1822; C. Müll. in Walp., Ann. 5: 930 (1860) and 6: 1171. 1861; Moldenke, Phytologia 18: 303—307 & 428. 1969.

Lent found this plant growing in "scattered clumps to 30 cm. in diameter" at 3300 meters altitude.

Additional citations: MEXICO: Pringle 6114 (Mu—350). State undetermined: J. G. Schaffner s.n. [Mexico 1875—79] (Mu—

387). COSTA RICA: Cartago: Lent 143 (N).ERIOCAULON MILHOENSE Herzog

Additional & emended bibliography: Herzog in Fedde, Repert. Spec. Nov. 29: 204--205, pl. 120, fig. a--d. 1931; Moldenke, Phytologia 18: 308. 1969.

Illustrations: Herzog in Fedde, Repert. Spec. Nov. 29: pl. 120 a--d. 1931.

Luetzelburg found this plant growing on moist campos, flowering and fruiting in September. Herzog notes "dimeri" on the type sheet.

Additional citations: BRAZIL: Pará: Luetzelburg 21053b [Macbride photos 18689] (Mu--type).

ERIOCAULON MINIMUM Lam.

Additional & emended bibliography: Burm. f., Fl. Ind. 30, pl. 9, fig. 1. 1768; C. Müll. in Walp., Ann. 5: 926 & 937 (1860) and 6: 1171. 1861; Stapf, Ind. Lond. 3: 91. 1930; Moldenke, Phytologia 18: 308--309 (1969) and 19: 25 & 26. 1969.

Illustrations: Burm. f., Fl. Ind. pl. 9, fig. 1. 1768.

ERIOCAULON MINUTUM Hook. f.

Additional & emended bibliography: Moldenke, Phytologia 18: 60 (1968), 18: 309--310 & 439 (1969), and 19: 35. 1969.

ERIOCAULON MIQUELIANUM Körn.

Additional synonymy: Eriocaulon radiatum Sieb. & Zucc., in herb. Cephalaria elongata Bürger, in herb.

Additional bibliography: Mak., Somoku Dzusetsu [Iconogr. Pl. Nippon] 17: pl. 49. 1912; Stapf, Ind. Lond. 3: 91. 1930; Sasaki, Cat. Govt. Herb. 118. 1930; Moldenke, Phytologia 18: 310--312 & 441 (1969) and 19: 14. 1969.

Illustrations: Ruhl. in Engl., Pflanzenreich 13 (4-30): 92, fig. 10. 1903; Mak., Somoku Dzusetsu [Iconogr. Pl. Nippon] 17: pl. 49. 1912.

Both the cheironymous names, Eriocaulon radiatum and Cephalaria elongata, appear to be based on the Bürger s.n. specimen in the Munich herbarium -- a specimen for which Ross suggests E. nipponicum Maxim., but with which suggested identification I cannot concur. This is also the type collection of E. miquelianum.

Additional citations: WESTERN PACIFIC ISLANDS: JAPAN: Kiusu: Maximowicz s.n. [Linahara, 1863] (Mu--347, Z). Island undetermined: Bürger s.n. [In Japonia] (Mu--230--isotype).

ERIOCAULON MISERUM Körn.

Additional & emended bibliography: Wall., Numer. List 207. 1832; C. Müll. in Walp., Ann. 5: 926 & 932 (1860) and 6: 1171. 1861; H. Lecomte, Journ. de Bot. 21: 89 & 90. 1908; H. Lecomte, Fl. Gén. Indo-Chine 7: 2 & 6. 1912; Moldenke, Phytologia 18: 312--313 (1969) and 19: 29 & 30. 1969.

It should be noted here that Wallich 6070 is entered very briefly and skimpily by Wallich (1832) as "6070. Eriocaulon cristatum Mart. Silhet Hk. WG & T^s".

Additional citations: PAKISTAN: East Bengal: W. Griffith 5578 (Mu--301, Mu--311). NEPAL: Bruce s.n. [Wallich 6070, in part] (Mu--217--isotype, Mu--328--isotype). INDIA: Assam: Herb. Bot. Surv. India s.n. [23.1.57] (Mu).

ERIOCAULON MODESTUM Kunth

Additional synonymy: Eriocaulon hygrophilus Mart., in herb.

Additional & emended bibliography: C. Mull. in Walp., Ann. 5: 930 (1860) and 6: 1171. 1861; Körn. in Mart., Fl. Bras. 3 (1): 476, 493, & 500, pl. 62, fig. 2. 1863; Stapf, Ind. Lond. 3: 91. 1930; Moldenke, Phytologia 18: 261, 264, 314--318, 381, & 396. 1969.

Emended illustrations: Körn. in Mart., Fl. Bras. 3 (1): pl. 62, fig. 2. 1863.

The cheironymous name, Eriocaulon hygrophilus, is apparently based on Martius 689, in part, collected at "Villa Rica et alibi", Minas Gerais, Brazil, and deposited in the herbarium of the Staatssammlung at Munich. This collection is a mixture with E. modestum f. viviparum Herzog. L. Riedel 1476 is also a mixture of the typical form of the species and f. viviparum, and, again, the collector's label indicates more than one place of collection ["Taubaté et Mogi"]. On Luetzelburg 493 Herzog notes that "forma ♂ petalorum tubo carnosissimo-incrassato, sepalis mox solutis". Brade 6590, with rather stiffer leaves than usual, Herzog identified as "f. grandifolia Herzog".

Additional citations: BRAZIL: Bahia: Luetzelburg 493 (Mu). Minas Gerais: Martius 689, in part (Mu--289). Paraná: Reitz & Klein 17625 (N). São Paulo: Brade 6590 (Mu); L. Riedel 1476, in part (Mu--219). State undetermined: J. E. Pohl s.n. [in Brasilia] (Mu--218).

ERIOCAULON MODESTUM f. GRANDIFOLIUM Herzog

Synonymy: Eriocaulon modestum f. grandifolia Herzog, in herb.

Additional bibliography: Moldenke, Phytologia 18: 317. 1969.

The Brade 6590, identified by Herzog as f. grandifolium, seems to me to be the typical form of the species instead. It should be noted that Herzog, like Ruhland and Fyson and certain older workers, usually employed the feminine ending on subspecific epithets, regarding them as modifying the words "varietas" or "forma" rather than the generic name of the plant.

ERIOCAULON MODESTUM f. RIGIDIFOLIUM Herzog

Additional bibliography: Moldenke, Phytologia 18: 317. 1969.

This form is apparently based on Luetzelburg 1580 in the Staatssammlung herbarium at Munich. The original collector's label accompanying that specimen is inscribed "vivipar" and one

flowering head actually has a complete young plant growing from it! The leaves do not seem especially rigid to me and so I doubt very much if the form is worth maintaining as distinct from f. viviparum Herzog.

Citations: BRAZIL: Goiás: Luetzelburg 1580 (Mu—type).

ERIOCAULON MODESTUM f. VIVIPARUM Herzog

Additional bibliography: Moldenke, Phytologia 18: 316—318. 1969.

It should be noted here that the original collector's label on the type specimen of this form in the Staatssammlung herbarium at Munich also claims Goiás as the state of Brazil in which it was collected, not Bahia. The Martius 689, cited below, is a collection made at "Villa Rica et alibi", and the L. Riedel 1476 was made at "Taubaté & Mogi" — both are mixtures of this form with plants of the typical form of the species. It seems very probable that the typical plants were collected at one locality and the viviparous ones at another.

Additional citations: BRAZIL: Goiás: Luetzelburg 15510 (Mu—type). Minas Gerais: Martius 689, in part (Mu—239). São Paulo: L. Riedel 1476, in part (Mu—219).

ERIOCAULON MOLINAE L. O. Williams

Additional bibliography: Moldenke, Phytologia 18: 303 & 318—319. 1969.

Additional citations: HONDURAS: Morazán: A. Molina R. 18500 (N—isotype).

ERIOCAULON MONOCOCCOS Nakai

Additional bibliography: Stapf, Ind. Lond. 3: 91. 1930; Moldenke, Phytologia 18: 307, 308, & 319. 1969.

ERIOCAULON MONTANUM Van Royen

Bibliography: Moldenke, Phytologia 3: 322. 1950; Van Royen, Nov. Guin., new ser., 10: 24, 32, 33, 40—42, & 44, fig. 3n. 1959; Van Royen, Blumea 10: 128. 1960.

Illustrations: Van Royen, Nov. Guin., new ser., 10: 32, fig. 3n. 1959.

This species is based on Giulianetti s.n. from Mt. Scratchley, at an altitude of about 4000 meters, Papua, New Guinea, deposited in the Rijksherbarium at Leiden. Van Royen (1959) states that the species is endemic to New Guinea, where it grows on wet slopes at high altitudes. He cites also Brass 4365 from 3680 meters on Mount Albert Edward in Papua, and remarks that "This species is closely related to E. carsonii F. Muell. from Australia but differs from that species in the much shorter leaves and peduncles and in the pubescence of leaves, bracts, sepals and petals".

Citations: MELANESIA: NEW GUINEA: Papua: Brass 4365 (Ca—1157994, N).

ERIOCAULON MUTATUM N. E. Br.

Additional & emended synonymy: Eriocaulon huillense Rendle, Cat. Afr. Pl. Welw. 2 (1): 95—96. May or June 1899 [not E. huillense Engl., 1959, nor Engl. & Ruhl., April 7, 1899]. Eriocaulon mutatum N. E. Br., in herb.

Additional & emended bibliography: Rendle, Cat. Afr. Pl. Welw. 2 (1): 95—96. 1899; N. E. Br. in Thiselt.-Dyer, Fl. Trop. Afr. 8: 256—257. 1901; Astle, Kirkia 7: 93. 1968; Moldenke, Phytologia 18: 110 & 320—321. 1969.

All the names associated with this taxon, both the valid and the invalid ones, are apparently based on the same cotype collections of Friedrich Martin Josef Welwitsch: (1) no. 2448, in almost boggy wooded marsh-meadows growing very plentifully with Gentianaceae and species of Drosera between Lopollo and Monino, Huila, Angola, the heads very black, March, April, and May, 1860; (2) no. 2449, various forms differing in age and size of head, on boggy short-grassed slopes densely packed with species of Scytonema, plentiful along with a terrestrial species of Isotles, the heads black, April and May, 1860; and (3) no. 2450, a poor form, occurs rather sparsely on the very lofty very short-grassed pastures of Empalanca which are flooded in summer, the heads black or blackish, in April, 1860. From the wording employed by Rendle it would seem that, if one of these collections were to be designated as the actual type collection, it ought to be no. 2448, which he seems to regard as the most normal. He comments that this is "A very distinct species".

The species is described by Robinson as an erect annual, with gray-black flowering heads, growing in drying moorland and along the side of "track through dambo", at 1250 meters altitude, flowering and fruiting from April to June. Astle (1968) says that it blooms from February to April and cites Astle 632 from Zambia.

Additional citations: ANGOLA: Huila: Welwitsch 2448 (Mu—cotype), 2449 (Mu—cotype). ZAMBIA: E. A. Robinson 2332 (Mu), 3733 (Mu), 5135 (Mu).

ERIOCAULON NANTOENSE Hayata

Additional synonymy: Eriocaulon nantoensis Hayata, Icon. Pl. Formos. 10: 272. 1921.

Additional & emended bibliography: Hayata, Icon. Pl. Formos. 10: 51 & 272, fig. 28. 1921; Moldenke, Phytologia 18: 324. 1969.

Hayata (1921) spells the specific epithet of this taxon "nantoense" on the illustration and on page 51 of the text, but as "nantoensis" on page 272.

ERIOCAULON NANUM R. Br.

Additional & emended bibliography: C. Müll. in Walp., Ann. 5: 926 & 934 (1860) and 6: 1171. 1861; F. M. Bailey, Compreh. Cat. Queensl. Fl. 584 & 586, fig. 565. 1913; Stapf, Ind. Lond. 3: 91.

1930; Moldenke, *Phytologia* 18: 61 (1968) and 18: 324--325. 1969.

Emended illustrations: F. M. Bailey, *Compreh. Cat. Queensl. Fl.* 586, fig. 565. 1913.

Stapf (1930) cites the illustration of this species in Bailey's work (1913) as page "588", but this is an error -- it is actually on page 586.

ERIOCAULON NAUTILIFORME H. Lecomte

Additional & emended bibliography: H. Lecomte, *Journ. de Bot.* 21: 89, 91, [101], 105--106, & 133--136, fig. 2 & 3. 1908; H. Lecomte, *Fl. Gén. Indo-Chine* 7: 2 & 7--8, fig. 1. 1912; Stapf, *Ind. Lond.* 3: 91. 1930; Moldenke, *Phytologia* 18: 325. 1969.

Illustrations: H. Lecomte, *Journ. de Bot.* 21: 106, 134, & 135, fig. 2 & 3. 1908; H. Lecomte, *Fl. Gén. Indo-Chine* 7: 7, fig. 1. 1912.

ERIOCAULON NEESIANUM Körn.

Additional & emended bibliography: C. Müll. in *Walp., Ann.* 5: 926 & 936--937 (1860) and 6: 1171. 1861; Moldenke, *Phytologia* 18: 186 & 325. 1969.

ERIOCAULON NEO-CALEDONICUM Schlecht.

Additional & emended bibliography: Moldenke, *Phytologia* 18: 270, 326--328, & 367 (1969) and 19: 28. 1969.

ERIOCAULON NEPALENSE Prescott

Additional bibliography: Moldenke, *Phytologia* 18: 348--349, 396, 429, & 433. 1969.

ERIOCAULON NIGRUM H. Lecomte

Additional & emended bibliography: H. Lecomte, *Journ. de Bot.* 21: 89, 92, 94, & 107--108. 1908; H. Lecomte, *Fl. Gén. Indo-Chine* 7: 3 & 16--17. 1912; Moldenke, *Phytologia* 18: 350--351. 1969.

ERIOCAULON NILAGIRENSE Steud.

Additional bibliography: Stapf, *Ind. Lond.* 3: 91. 1930; Moldenke, *Phytologia* 18: 351--353, 444, & 446 (1969) and 19: 11 & 22. 1969.

ERIOCAULON NIPPONICUM Maxim.

Additional bibliography: H. Lecomte, *Journ. de Bot.* 21: 89 & 90. 1908; Sasaki, *Cat. Govt. Herb.* 118. 1930; Moldenke, *Phytologia* 18: 353--357, 372, 387, & 388. 1969.

Additional citations: WESTERN PACIFIC ISLANDS: JAPAN: Honshu: Ohwi & Koyama 137 (Se--189464).

ERIOCAULON NOVOGUINEENSE Van Royen

Bibliography: Moldenke, *Phytologia* 3: 322. 1950; Van Royen, *Nov. Guin., new ser.*, 10: 41--42 & 44, fig. 5e. 1959.

Illustrations: Van Royen, *Nov. Guin., new ser.*, 10: 41, fig.

5e. 1959.

This species is based on Brass 4367 from an altitude of about 3680 meters on Mount Albert Edward, Papua, New Guinea, deposited in the Rijksherbarium at Leiden. Van Royen (1959) states that the species is endemic to New Guinea, where it grows on the edges of lakes and on marshy slopes at high altitudes. He avers that it is "closely related to E. alpinum and E. montanum. The connate sepals of the ♀ flowers this species has in common with E. alpinum though it differs from that one in the glabrous floral bracts, sepals, and petals. E. montanum differs from the present species in the free sepals and the pubescent floral bracts, sepals and petals." He appends the following tabulation of these differences: (1) E. alpinum: inflorescence bisexual; pistillate sepals connate, blackish, hairy on the outer surface; pistillate petals with short yellow hairs at the apex; seeds with a few dark-brown longitudinal lines, glabrous; (2) E. montanum: inflorescence bisexual; pistillate sepals free, yellowish, hairy on the outer surface; pistillate petals with long white hairs at the apex; seeds with numerous upwardly-directed short hairs; and (3) E. novoguineense: inflorescence unisexual; pistillate sepals connate, yellowish, glabrous; pistillate petals glabrous; seeds with numerous longitudinal lines, glabrous.

The type collection was previously erroneously reported by me as E. brevipedunculatum Merr., which it closely resembles in its habit.

Citations: MELANESIA: NEW GUINEA: Papua: Brass 4367 (Ca-1329271--isotype, N--isotype).

ERIOCAULON NUDICUSPE Maxim.

Additional bibliography: Sasaki, Cat. Govt. Herb. 118. 1930; Moldenke, Phytologia 18: 357-358. 1969.

Additional citations: WESTERN PACIFIC ISLANDS: JAPAN: Honshu: Inami 956 (Se-159463).

ERIOCAULON ODORATUM Dalz.

Additional & amended bibliography: H. Lecocq, Journ. de Bot. 21: 88, 89, 107, & 108. 1908; Moldenke, Phytologia 18: 349, 359-360, 396, & 434 (1969) and 19: 44. 1969.

Lecocq (1908) writes the surname of the author of this species' name as "Dolz", obviously in error.

ERIOCAULON OLIVERI Fyson

Additional bibliography: Stapf, Ind. Lond. 3: 91. 1930; Moldenke, Phytologia 18: 361-362 (1969) and 19: 11. 1969.

ERIOCAULON ORPADUM Van Royen.

Synonymy: Eriocaulon batavorum Van Royen, Blumea 10: 128, nom. nud. 1960.

Bibliography: Van Royen, Nov. Guin., new ser., 10: 23, [27], 34-35, & 44, fig. 1e. 1959; Van Royen, Blumea 10: 128. 1960; Mol-

denke, *Phytologia* 19: 19. 1969.

This species is based on Eyma 4765 from an altitude of 1750 meters at Wissel Lakes, northeast and east of Mount Bubeiro in west-central New Guinea, and deposited in the Rijksherbarium at Leiden. Van Royen (1959) also cites Hoogland & Pullen 6009 from Northeastern New Guinea and notes that "This species is closely related to E. sumatranum Ruhland but differs by the oblong-ovate petals with a black gland. The specific epithet is derived from the mountainous habitat." In a letter to E. Milne-Redhead, dated September 3, 1969, he says "The name Eriocaulon batavorum Van Royen was replaced in 1960 by the name Eriocaulon oreadum Van Royen, and the name has no status whatever. The mistake slipped in when I was in New Guinea and my annotation as to the change was overlooked by the editor."

ERIOCAULON ORYZETORUM Mart.

Additional bibliography: H. Lecomte, *Journ. de Bot.* 21: 89 & 92. 1908; H. Lecomte, *Fl. Gén. Indo-Chine* 7: 2 & 9--10. 1912; K. Larsen, *Dansk Bot. Ark.* 23: 380, 381, & 397, fig. 11 & 12. 1966; Ornduff, *Reg. Veg.* 55: 13 & 118. 1968; Moldenke, *Phytologia* 18: 362--363. 1969.

Additional illustrations: K. Larsen, *Dansk Bot. Ark.* 23: 380, fig. 11 & 12. 1966.

Larsen (1966) states that this species is "Distributed from N. India through Burma and Thailand to Cambodia and Laos" and continues: "Two different chromosome numbers were revealed. If this is a species with $x_2 = 15$, one is tetraploid (2255), the other hexaploid (6082). The herbarium material is very sparse, the diploid being represented by one rather small plant, and the tetraploid by a more vigorous sample, but whether this is really a significant character cannot be told at present. The chromosomes are of the same type as in E. achiton." He concludes that $2n = 60, 90$.

ERIOCAULON PALUSTRE Salzm.

Additional & emended bibliography: Körn. in Mart., *Fl. Bras.* 3 (1): 475, 480, & 500, pl. 61, fig. 1. 1863; Stapf, *Ind. Lond.* 3: 91. 1930; Moldenke, *Phytologia* 18: 365--366. 1969.

Emended illustrations: Körn. in Mart., *Fl. Bras.* 3 (1): pl. 61, fig. 1. 1863.

ERIOCAULON PAPUANUM Van Royen

Bibliography: Van Royen, *Nov. Guin.*, new ser., 10: 23, 32, 33, 37--38, 43, & 44, fig. 30. 1959.

Illustrations: Van Royen, *Nov. Guin.*, new ser., 10: 32, fig. 30. 1959.

This species is based on Womersley & Hoogland 4956 from near Nondugl, between 1800 and 2200 meters altitude, in Northeastern New Guinea and deposited in the Rijksherbarium at Leiden. Van Royen (1959) also cites Hoogland & Pullen 5397 from the same re-

gion and states that the species is endemic to New Guinea, where it grows "On wet mountainslopes at high altitudes" and is known as "mimneh" and "masul". He also remarks that "This species resembles E. truncatum Ham. in appearance but differs from that species in the absence of glands on the petals in both types of flowers and in the pubescence of the receptaculum which is glabrous in E. truncatum. A close relationship in the flowers exists with E. zollingerianum Koernicke but the new species is immediately to separate from that species by the crestless sepals of the female flowers. E. papuanum also resembles E. scariosum R. Brown from Australia but differs in the absence of glands in the petals of the female flowers. The specific epithet has been derived from the general name Papua for New Guinea."

ERIOCAULON PARKERI B. L. Robinson

Additional synonymy: Eriocaulon septangulare var. parkeri (B. L. Robinson) Boivin & Cayouette, Nat. Canad. 94: 524. 1967.

Additional bibliography: Stapf, Ind. Lond. 3: 91. 1930; Boivin & Cayouette, Nat. Canad. 94: 524. 1967; Ornduff, Reg. Veg. 50: 39 & 120. 1967; Brummitt & Ferguson, Reg. Veg. 61: 107. 1969; Moldenke, Phytologia 18: 368—371, 376, 377, 379, 381, & 437, fig. 4 (1969) and 19: 40. 1969; F. C. Seymour, Fl. N. Engl. 171. 1969.

Additional citations: MAINE: Sagadahoc Co.: Fernald & Long s. n. [Pl. Exsicc. Gray. 174] (Se—133385). MASSACHUSETTS: Plymouth Co.: S. F. Blake 10964 (Se—86960). NEW YORK: Ulster Co.: Muenschler, Winne, & Isely 20694 (Se—199204). VIRGINIA: Nansemond Co.: Fernald, Long, & Clement 15238 (N). New Kent Co.: Fernald & Long 13576 (N). NORTH CAROLINA: Tyrrell Co.: A. E. Radford 44454 (Se—211847).

ERIOCAULON PARVUM Körn.

Synonymy: Eriocaulon parvum Körn. apud Hayata, Icon. Pl. Formos. 10: 272, sphalm. 1921.

Additional & emended bibliography: Iinuma, Somoku Dzusetsu, ed. 2, 17: pl. 48. 1874; Hayata, Icon. Pl. Formos. 10: 52 & 272. 1921; Stapf, Ind. Lond. 3: 91. 1930; Satake, Bull. Tokyo Sci. Mus. 4: [Rev. Jap. Erioc.] 19—21 & 23. 1940; Moldenke, Phytologia 18: 355 & 371—372. 1969.

Additional illustrations: Iinuma, Somoku Dzusetsu, ed. 2, 17: pl. 48 [in color]. 1874.

Hayata (1921) on page 272 refers to this species as mentioned also on page "55" of this work, but this is apparently a misprint for page 52.

ERIOCAULON PELLUCIDUM Michx.

Additional synonymy: Eriocaulon septemangulare Auct., in herb. [not E. septemangulare Turner, 1959].

Additional & emended bibliography: Pursh, Fl. Am. Sept. 1: 92.

1816; Nutt., Gen. 1: 90. 1818; Beck, Bot., ed. 1, 369—370 (1833) and ed. 2, pr. 1, 370. 1848; Hook. & Arn. in Hook., Brit. Fl., ed. 6, 445 & 595 (1850) and ed. 7, 458 & 606. 1855; Beck, Bot., ed. 2, pr. 2, 370. 1856; Hook. & Arn. in Hook., Brit. Fl., ed. 8, 459 & 617. 1860; Beck, Bot., ed. 2, pr. 3, 370. 1868; W. Stone, Ann. Rep. N. J. State Mus. 1910: [Pl. South. N. J.] pl. 28. 1912; Stapf, Ind. Lond. 3: 91. 1930; Ornduff, Reg. Veg. 50: 39 & 120. 1967; MacKeever, Native & Naturl. Pl. Nantucket 43. 1968; Moldenke, Phytologia 18: 370, 373—387, 425, 426, 433, & 434, fig. 5 (1969) and 19: 32. 1969; F. C. Seymour, Fl. N. Engl. 171. 1969.

Emended illustrations: W. Stone, Ann. Rep. N. J. State Mus. 1910: [Pl. South. N. J.] pl. 28. 1912.

MacKeever (1968) states that on Nantucket Island this species blooms from July to September.

Thanks to the kindness of Dr. F. C. Seymour, I am now able to state that the S. C. Brooks s.n. [Locke's Pond, July 24, 1909], cited by me in Phytologia 18: 387 (1969) as from "Locality undetermined" is from Franklin County, Massachusetts.

Additional citations: LABRADOR: Gillett & Findlay 5471 (Se—163422). NEW BRUNSWICK: Charlotte Co.: Malte 447/29 (Se—192784). Madawaska Co.: Malte & Watson 733 (Se—127429). QUEBEC: Argenteuil Co.: Rolland-Germain s.n. [August 21, 1946] (Se—165417). ONTARIO: Algoma Dist.: Taylor, Hosie, Fitzpatrick, Losee, & Leslie 1338 (Se—122335). MAINE: Waldo Co.: R. E. Friesner s.n. [8-12-36] (Se—17504). MASSACHUSETTS: Franklin Co.: Torrey, Northcraft, Dalevoryas, & Putala s.n. [Aug. 14, 1950] (Se—182700), s.n. (Se—182601). NORTH CAROLINA: Washington Co.: Pence s.n. [A. E. Radford 45084] (Se—232402). WISCONSIN: Vilas Co.: L. R. Wilson 3025 (Se—18367). MINNESOTA: Crow Wing Co.: Burglehaus s.n. [Aug. 1891] (Se—96012).

ERIOCAULON PETROSEPALUM Hayata

This binomial, previously regarded by me as representing a valid taxon, should be reduced to synonymy under E. sexangulare L., which see.

ERIOCAULON PILIPHORUM Satake

Additional bibliography: Honda, Nom. Pl. Jap. 462. 1939; Moldenke, Phytologia 18: 392. 1969.

The type of this species was collected by J. Nikai (no. 2691) at Tubakigōhigasibun-mura, in the province of Nagato, Honshu, Japan, on October 7, 1917, and is deposited in the herbarium of Tokyo University. The species is known thus far only from this type specimen.

ERIOCAULON PILOSISSIMUM Van Royen

Additional & emended bibliography: Van Royen, Blumea 10: 128, 129, & 134—135, fig. 1G. 1960; D. N. F. Kiehl, Blumea 10: 657. 1960; Moldenke, Phytologia 18: 392. 1969.

ERIOCAULON PLUMALE N. E. Br.

Additional bibliography: Moldenke, *Phytologia* 18: 393—395 & 426 (1969) and 19: 35. 1969; Anon., *Assoc. Stud. Tax. Fl. Afr. Trop. Index* 1968: 25. 1969.

ERIOCAULON PLUMALE subsp. **JAEGERI** (Moldenke) Meikle

Additional bibliography: Moldenke, *Phytologia* 18: 394. 1969; Anon., *Assoc. Stud. Tax. Fl. Afr. Trop. Index* 1968: 25. 1969.

ERIOCAULON PLUMALE subsp. **KINDIAE** (H. Lecomte) Meikle

Additional bibliography: Moldenke, *Phytologia* 18: 394—395 & 426. 1969; Anon., *Assoc. Stud. Tax. Fl. Afr. Trop. Index* 1968: 25. 1969.

ERIOCAULON PTEROSEPALUM Herzog

This binomial, previously regarded by me as valid for the taxon in question, must be discarded since it appears to be a later homonym. The taxon is discussed under *E. herzogii* Moldenke in this series of notes, which see.

ERIOCAULON PULCHELLUM Körn.

Additional & emended bibliography: Ruhl. in Engl., *Pflanzenreich* 13 (4-30): 65, 97, 99, & 287, fig. 13 E—N. 1903; Engl. & Drude, *Veget. Erde* 9 (2): 265. 1908; Stapf, *Ind. Lond.* 3: 91. 1930; Moldenke, *Phytologia* 18: 425—426. 1969.

Additional & emended illustrations: Ruhl. in Engl., *Pflanzenreich* 13 (4-30): 99, fig. 13 E—N. 1903; Engl. & Drude, *Veget. Erde* 9 (2): 265. 1908.

ERIOCAULON PULVINATUM Van Royen

Additional bibliography: Van Royen, *Nov. Guin., new ser.*, 10: 23, 32—33, & 44, fig. 3p. 1959; Moldenke, *Phytologia* 18: 427. 1969.

Additional illustrations: Van Royen, *Nov. Guin., new ser.*, 10: 32, fig. 3p. 1959.

This species is based on Brass 9997 from an altitude of 3560 meters, northeast of Mount Wilhelmina in the Nassau Range of north-central New Guinea, deposited in the Rijksherbarium at Leiden. Van Royen (1959) cites also Brass 9231 & 9282 from the same region, regards the species as endemic to New Guinea, and states that it grows there "In alpine bog turfs and open sunny bogs". He remarks that "The present species differs from *E. hookerianum* Stapf and the var. *microphyllum* Van Royen by the glabrous involucre bracts, by the very short peduncles and the cushion-like growth (from which it derives its specific epithet) while the other species is always growing solitary."

ERIOCAULON PYGMAEUM Soland.

Additional & emended bibliography: F. M. Bailey, *Compreh. Cat. Queensl. Pl.* 584 & 586, fig. 566. 1913; Stapf, *Ind. Lond.* 3: 91. 1930; Moldenke, *Phytologia* 18: 428. 1969.

Emended illustrations: F. M. Bailey, Compreh. Cat. Queensl. Pl. 586, fig. 566. 1913.

ERIOCAULON QUINQUANGULARE L.

Additional & emended synonymy: Randalia Madraspat. Graminis folio globulifer Petiv., Mus. Pet. 77. 1695. Scabiosa graminifolia, capitulis argenteis, s. Statice minima Maderaspatana Pluk., Alm. Bot. 3: 336. 1696. Gramen junceum Ind. Orient. mimis, capiculo rotundo, ex paleaceis spiculis, in cacumine caulis glomerato; Graminis bufonij aemulo, Callapillee Malabarorum, cum proxime praecedenti plurimum convenit Pluk., Alm. Bot. Mant. 98. 1700. Kokmatha minor H. Herm., Mus. Zeyl., ed. 1, 20. 1717. Eriocaulon culmo quinquangulari, calyce universali pentaphyllo L., Fl. Zeyl., ed. 1, 20. 1747. Randalia maderaspatana, graminis folio, globulifera Petiv. apud L., Fl. Zeyl., ed. 1, 20, in syn. 1747. Scabiosa gramineis nudicaulis, capitulis argenteis, sive Statice minima maderaspatana Pluk. apud L., Fl. Zeyl., ed. 1, 20, in syn. 1747. Randalia maderaspatana Petiv. apud Mart. in Wall., Pl. Asiat. Rar. 3: 28, in syn. 1832. Gramen junceum Ind. Orient. mimis, capiculo rotundo, ex paleaceis spiculis, in cacumine caulis glomerato; Graminis bufonij aemulv. Callapillee Malabarorum, cum proxime praecedenti plurimum convenit Pluk. apud Moldenke, Phytologia 18: 429, in syn. sphalm. 1969.

Additional & emended bibliography: Pluk., Alm. Bot. 3: 336. 1696; Petiv., Mus. Petiv. 77. 1696; H. Herm., Mus. Zeyl., ed. 1, 17 & 20. 1717; Pluk., Phytogr. pl. 221, fig. 7. 1720; L., Fl. Zeyl., ed. 1, 20 (1747) and ed. 2, 20. 1748; L., Sp. Pl., ed. 1, pr. 1, 1: 87 (1753) and ed. 2, 1: 129. 1762; Hook. & Arn., Bot. Beech. Voy. 219. 1841; La Maout & Decne., Trait. Gén. Bot. 598. 1868; Hook. in La Maout, Decne., & Hook., Gen. Syst. Bot. 872. 1873; H. Lecocq, Journ. de Bot. 21: 87, 89, 91--92, & 102. 1908; H. Lecocq, Fl. Gén. Indo-Chine 7: 2 & 12--13. 1912; Stapf, Ind. Lond. 3: 91. 1930; Moldenke, Phytologia 18: 428--435, 447, & 451 (1969) and 19: 25, 26, 29, & 38. 1969.

Additional & emended illustrations: Pluk., Phytogr. pl. 221, fig. 7. 1720; La Maout & Decne., Trait. Gén. Bot. 598. 1868; Hook. in La Maout, Decne., & Hook., Gen. Syst. Bot. 872. 1873.

The "preceding" species referred to by Plukenet (1700) is described with very similar phrases, but with "majus" replacing "mimis" and with "Shaneecoree" replacing "Callapillee" -- it is a synonym of E. sexangulare L., which see.

The Plukenet (1696) reference in the synonymy above is often incorrectly cited as page "366" or dated "1720", while the Petiver (1695) reference is often cited as page "796", but the latter is a paragraph (not page) number! The original description by Petiver reads "Randalia Madraspat. Graminis folio globulifer. This elegant plant was first collected by Mr. Randal a Gardner at Fort St. George and sent to my worthy friend Mr. Charles Du-Bois".

Stapf (1930) states that the illustrations in La Maout & Decne. (1868) and the English translation by Mrs. Hooker (1873) are of "E. quinquangulare Bojer", but they are unaccredited in both works cited and I see no reason why they should be thought to represent Bojer's homonymous binomial rather than that of Linnaeus.

The Griffith 5586, Hohenacker 131 & 131c, Stocks, Law & s.n. [Malabar, Concan], T. Thomson s.n. [Plan. Ganget. Inf.], and Walker 14, distributed as E. quinquangulare, are all E. sollyanum Royle.

Additional & emended citations: INDIA: Mysore: G. Thomson s.n. [Maison & Carnatic] (S). State undetermined: R. Wight 2367F, in part (N, N).

ERIOCAULON RITCHIEANUM Ruhl.

Additional bibliography: Fyson, Journ. Indian Bot. 2: 261. 1921; Moldenke, Phytologia 18: 439. 1969.

ERIOCAULON ROBUSTIUS (Maxim.) Mak.

Additional & emended synonymy: Eriocaulon alpestre robustius Maxim. apud Stapf, Ind. Lond. 3: 90. 1930. Eriocaulon alpestre Ruhl. apud Satake in Nakai & Honda, Nov. Fl. Jap. 6: 46 & [86], in syn. 1940 [not E. alpestre Hook. f. & Thoms., 1867, nor Sasaki, 1940].

Additional bibliography: Mak., Somoku Dzusetsu [Iconogr. Pl. Nipp.] 17: pl. 50. 1912; Sasaki, Cat. Govt. Herb. 118. 1930; Stapf, Ind. Lond. 3: 90. 1930; Moldenke, Phytologia 18: 440-443. 1969.

Additional illustrations: Mak., Somoku Dzusetsu [Iconogr. Pl. Nipp.] 17: pl. 50. 1912.

Additional citations: WESTERN PACIFIC ISLANDS: JAPAN: Honshu: C. Hashimoto 850 (Se-159544); S. Suzuki s.n. [Sep. 29, 1951] (Se-141353); Togasi 915 (Se-159495).

ERIOCAULON ROBUSTO-BROWNIANUM Ruhl.

Additional & emended bibliography: K. Larsen, Dansk Bot. Ark. 23: 380, 381, & 397, fig. 13 & 14. 1966; Moldenke, Phytologia 18: 443-444 (1969) and 19: 22. 1969.

Illustrations: K. Larsen, Dansk Bot. Ark. 23: 380, fig. 13 & 14. 1966.

Larsen (1966) says that this species is "Distributed from India through Burma and Thailand to Cambodia and Laos" and continues "This has been one of the most difficult of all the strains to study cytologically on account of the great number of chromosomes, and no final establishment of the somatic number has been possible. The plate drawn as in Fig. 13 shows 103 chromosomes; this is the lowest number counted. Fig. 14 shows a plate where 111 chromosomes could be distinguished; this was one of the best. It should, however, be noted that it is more likely that there are more than 110 chromosomes than less. All the chromosomes are nearly the same size and shape, much like that found in E.

oryzetorum and E. achiton."

ERIOCAULON ROBUSTUM Steud.

Additional bibliography: Stapf, Ind. Lond. 3: 91. 1930; Moldenke, Phytologia 18: 444-446 (1969) and 19: 11, 17, & 18. 1969.

ERIOCAULON ROSULATUM Körn.

Additional & emended bibliography: Körn. in Mart., Fl. Bras. 3 (1): 486-488 & 500, pl. 61, fig. 3. 1863; Stapf, Ind. Lond. 3: 91. 1930; Moldenke, Phytologia 18: 447-448. 1969.

Emended illustrations: Körn. in Mart., Fl. Bras. 3 (1): pl. 61, fig. 3. 1863.

ERIOCAULON ROUXIANUM Steud.

Additional bibliography: Moldenke, Phytologia 18: 448 (1969) and 19: 36. 1969.

ERIOCAULON SACCATUM Van Royen

Bibliography: Van Royen, Nov. Guin., new ser., 10: 22, 36, & 42-44, fig. 4q. 1969.

Illustrations: Van Royen, Nov. Guin., new ser., 10: 36, fig. 4q. 1959.

This species is based on Hoogland & Pullen 5398 from the Upper Asaro Valley, at an altitude of about 1800 meters, in North-eastern New Guinea, deposited in the Rijksherbarium at Leiden. Van Royen (1959) cites also Kanehira & Hatusima 13542 from Dutch New Guinea. He avers that the species is endemic to New Guinea, where it grows "in very wet muddy patches on mountain slopes at high altitudes" and is known as "mirmeh" and "masul". He comments that "This species resembles in its flowers E. scariosum R. Brown and E. papuanum Van Royen but differs from either species in the saccate sepals of the female flowers and the long white hairs at the inside of these sepals. This detail it shares with E. zollingerianum Koernicke, but there the sepals are broadly serrate-cristate."

ERIOCAULON SCARIOSUM J. Sm.

Additional & emended bibliography: Körn. in Mart., Fl. Bras. 3 (1): 500. 1863; Benth. & F. Muell., Fl. Austral. 7: 190-193, 197, 792, & 793. 1878; F. M. Bailey, Weeds & Poison. Pl. Queensl. 207. 1906; Stapf, Ind. Lond. 3: 91. 1930; Van Royen, Nov. Guin., new ser., 10: 38 & 43. 1959; M. Gray, Contrib. N. S. Wales Nat. Herb. 3: 7. 1961; J. W. Vickery, Contrib. N. S. Wales Nat. Herb. 3: 450. 1965; Moldenke, Phytologia 18: 264, 326, 327, & 450-451 (1969) and 19: 28. 1969.

Continuing Koernicke's description of his E. smithii var. α : "foliis plerumque 9-nerviis (Hb. Holm. ded. Smith). Leg. Sieber no. 582 (Hb. Berol. et Schldl.) et D'Urville (Hb. Berol.) et Lhotzky (Hb. Steudel). var. β -- minor; pedunculis usque 2 1/2-pollicaribus; foliis 4--5-nerviis. Botany Bay Bush Martio leg.

Leichhardt (Hb. Berol.). var. γ — pedunculis usque 6-pollicaribus; foliis plerumque 7—, angustioribus 5-nerviis. Leg. Sieber (Hb. Vindob.)." He also notes "In Brasilia non crescit. Cl. Steudel specimina Lhotskyana sine loco natali indicato e Brasilia esse allata inuste suspicatus est".

It should be noted that Bentham & Mueller (1878) for E. scariosum [=E. brunonis] cite R. Brown s.n. and Schultz 261 from North Australia, while for E. smithii [=E. scariosum] they cite Beckley s.n., R. Brown s.n., and Woolfs s.n. from New South Wales, Bowman s.n., F. Mueller s.n., and Wuth s.n. from Queensland, and F. Mueller s.n. from Victoria.

Eriocaulon lhotskyi is based on an unnumbered collection made by Johann Lhotsky — in whose honor it is named. Steudel, in his original description (1855) — as indicated above — avers that it is from "Brasilia", but the label on the Berlin specimen, doubtless an isotype, is plainly inscribed "N. Holl." [=Australia]. Steudel's publication is sometimes erroneously cited as "1885".

Van Steenis (1950) reviews the status of the genus Busseuillia as follows: "Lesson placed this genus in the Restiaceae. The floral structure, however, points undubitably to Eriocaulon L., though Lesson, in his description, made a mistake in believing that the petals of the female flowers were stigmas. He mentions the flowers to be dioecious, but probably means 'unisexual'. In determining the species with Australian floras one comes to E. smithii R. Br., which according to J. Britten....should be called E. scariosum Sm. in Rees. In the Paris Herbarium I have searched, April 1949, for the original sheet, with the kind assistance of Mr Willmann. Unfortunately we did not (wholly) succeed. The only sheet we found which might be the type of Busseuillia was an 'ex herb. Brongniart'. The label was written by Spach under the name of E. smithii, stated to have been collected at 'Port Jackson, Nouvelle Hollande, d'Urville, 1825'. This, however, is a mistake, as Dumont d'Urville was, in that year, not in Australia. The specimen, however, is not a replica of the figure as the large rosette leaves of the figure (typical of juvenile E. smithii) are absent. Moreover, the analysis-drawing present on the sheet is not conformable to the figure published. On the other hand hardly any other sheet at Paris can possibly represent the type of Busseuillia. As the names of the Australian species of Eriocaulon antedate in general Busseuillia, the specific epithet has, fortunately, little significance for purposes of priority. The generic name Busseuillia smoothly disappears in the synonymy of Eriocaulon. In the Muséum d'Histoire Naturelle at Paris is a list of the collections of the 'Chirurgien Major' Busseuil in his own handwriting, dated Brest, le 20 juillet 1826. On page 4 of this list there is an enumeration of plants from Australia in which two are entered as 'incon-

mu'. One of them will probably have been Busseuillia." It should be noted that Salisbury (1953) still places Busseuillia in the Restionaceae, crediting the species as from New South Wales, but Airy Shaw (1966) places it correctly in the synonymy of Eriocaulon. The genus was, of course, named in honor of F. L. Busseuil.

Although Kunth (1841) and Jackson (1895) both cite the Randalia scariosa binomial to Desvieux (1828), the combination does not actually occur in the reference cited. It is only implied there, and this does not constitute valid publication or even effective publication!

Guillaumin (1948) includes this species in his enumeration of the flora of New Caledonia, but I have not as yet seen any material of it from there. He distinguishes it from the other species known to him from New Caledonia as follows:

1. Plante robuste; feuilles longues de 20—35 cm.; capitules globuleux, à pédoncule à 6 côtes, long de 20—30 cm.....
E. pancheri.
- 1a. Plantes plus petites; feuilles longues de 13 cm, au plus.
2. Capitules globuleux.
3. Pédoncules à côtes bien nettes.
 4. Pédoncule à 6 côtes, long de 14—16 cm.; feuilles longues de 5—13 cm., verticille externe du périgone de la fleur ♀ à pièces obtuses.....E. comptonii.
 - 4a. Pédoncule à 5 côtes, long de 8—20 cm.; feuilles longues de 3—7 cm.; verticille externe de la fleur ♀ à pièces aiguës, ovales.....E. scariosum.
- 3a. Pédoncule presque cylindrique, long de 5—8 cm.; feuilles longues de 3—7 cm.....E. neo-caledonicum.
- 2a. Capitules turbinés, très petites, à pédoncule à 7 côtes, extrêmement long (80 cm., 1 m.).....E. longepedunculatum.

Briggs (1966) records the chromosome number for E. scariosum as $2n = 64$, based on N. A. Banks 64027 as voucher specimen. Hubbard describes the plant as having whitish inflorescences, forming a carpet of dark-green fleshy leaves, common among sedges and Juncus in swamps, at 130 feet altitude, flowering and fruiting in November. It has also been collected in flower and fruit in February and May.

Däniker (1932) says "E. Schmithii R. Br. Prodr. 254. 1810. NC : D[äniker] 186, bl. u. bt., in dem sumpfigen Neiderungen des Yatétales (4. X. 24) kleines Kraut mit grundständigen fadenförmigen Blättern, sehr oft".

Evans (1966) cites Steudel's original publication of E. lhot-skyi as "1885", instead of 1855, and says that this species grows in New South Wales, Queensland, and Victoria. In New South Wales he states that it inhabits "wet ground at margins of ponds and lagoons, in bogs and swampy places and along the sides of roadside drains, usually on sandy soils" in the Coast, Tablelands, and

Central Western Slopes regions. He cites the following specimens from New South Wales: Bauerlen s.n. [12.1884; 58383], s.n. [12.1894; 58368]; Betche s.n. [1.1883; 58371]; Blakely s.n. [4.1900; 58381]; Camfield s.n. [2.1899; 58377], s.n. [10.1893; 58379], s.n. [12.1894; 58380]; Cheel s.n. [11.1898; 58375]; Constable s.n. [1.1953; 22204], s.n. [1.1956; 36567], s.n. [7.1963; 64028, 64029, 66136], s.n. [1.1964; 64027, 64030, 64031]; Davis s.n. [1.1950; 52578], s.n. [12.1954; 58370]; Deane s.n. [12.1884; 58373, 58376]; Evans s.n. [5.1960; 63147]; Forsyth s.n. [12.1896; 58374]; Froggatt s.n. [12.1893; 58378]; Garden s.n. [10.1951; 17743]; Gray s.n. [2.1961; 58382]; Ingram s.n. [3.1952; 66343]; Johnson & Constable s.n. [8.1953; 26368]; Maiden s.n. [12.1908; 58367]; McBaron s.n. [4.1962; 57095]; McKee s.n. [1.1953; 58372]; Mueller s.n. [1953; 58384]; O'Grady s.n. [1960; 58369]; Rodway s.n. [4.1925; 52581], s.n. [1.1934; 52580], s.n. [7.1935; 52579].

The Perrottet 1166, distributed at E. scarosum, is actually E. leucomelas Steud., while Flecker 2257 is E. nanum R. Br.

Additional citations: AUSTRALIAN REGION: AUSTRALIA: New South Wales: Boorman s.n. [Wallangarra, 1.1918] (S); Leichhardt s.n. [Botany Bay Bush, 1842] (B); V. May s.n. [Elenora Heights, 28/1/35] (Go); McKie s.n. [Guyra, 3 Jan. 1935] (S); Meebold 2641 (Mu), 6392 (Mu), s.n. [Rose Bay, Mai 1933] (Mu, Z). Queensland: Flecker 1193 (Qu); C. E. Hubbard 3459 (S), 4755 (S); Meebold 8073 (Mu). State undetermined: D'Urville s.n. [Nova Hollandia] (B); Herb. Admiralität s.n. [Nova Hollandia] (S, Ut—323); Herb. Roth s.n. (B); Lhotsky s.n. [N. Holl.] (B); Sieber Fl. Nov. Holl. 582 (B); J. E. Smith 4 (S), 5 (S); Wollengong s.n. (B). MOUNTED ILLUSTRATIONS: Herb. Palat. Vindob. Icon. Varias 23 (V); Weloszak s.n. (V—6512).

ERIOCAULON SCHIEDEANUM Körn.

Additional & emended synonymy: Eriocaulon jaliscanum S. Wats., Proc. Am. Acad. 26: 157. 1891. Eriocaulon microcephalum Cham. & Schlecht. apud Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 878, in syn. 1893 [not E. microcephalum Hook. & Arn., 1854, nor Humb. & Bonpl., 1818, nor H.B.K., 1816, nor Humb. & Kunth, 1841, nor Kunth, 1826, nor Sellow, 1959].

Bibliography: Cham. & Schlecht., Linnaea 6: 43. 1831; Körn. in Mart., Fl. Bras. 3 (1): 492—493. 1863; C. Müll. in Walp., Ann. 5: 930 (1860) and 6: 1171. 1861; S. Wats., Proc. Am. Acad. 26: 157. 1891; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 878. 1893; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 1, 158. 1902; Ruhl. in Engl., Pflanzenreich 13 (4-30): 43, 56, 113, 286, & 287. 1903; H. B. Davis, Life & Works Pringle 123 & 141. 1936; Moldenke, N. Am. Fl. 19 (1): 20 & 36—37. 1937; Moldenke, Phytologia 1: 322—323. 1939; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 2, 158. 1941; Moldenke, Known Geogr. Distrib. Erioc. 4, 36, & 39.

1946; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 878. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 30 & 206. 1949; Moldenke, Phytologia 3: 344. 1950; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 3, 158. 1959; Moldenke, Résumé 36, 289, & 483. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 878. 1960; Moldenke, Résumé Suppl. 4: 4 (1962), 13: [1] (1966), and 14: [1]. 1966; Moldenke, Phytologia 17: 395 (1968) and 18: 303 & 304. 1969.

Jackson (1893) cites an Eriocaulon microcephalum Cham. & Schlecht. to Linnaea 6: 43 (1831), but Chamisso & Schlechtendal do not at that place propose any such new homonymous binomial. What they say is merely "Eriocaulon species. An E. microcephalum HBK., 1, p. 201? — in paludibus prope Hacienda de la Laguna. Oct." The collection to which they refer here is the type collection of E. schiedeannum, Schiede 967.

The E. microcephalum of H.B.K. is a valid species, with the homonymous variations in accreditation attributed to Humboldt & Bonpland, to Humboldt & Kunth, and to Kunth alone as synonyms; the E. microcephalum of Hooker & Arnott is E. ehrenbergianum Klotzsch, while that of Sellow is Paepalanthus tortilis (Bong.) Mart.

Eriocaulon schiedeannum has been found growing at altitudes of 1900 to 2600 meters, flowering and fruiting from September to November. McVaugh found it to be "abundant" in seepage areas over rocks and "very abundant in turf of all grassy openings" in open forests of Quercus macrophylla. Feddema describes it as "common" in grassy areas in pine-oak savannas and in grassy areas in oak woodlands "with much Dodonaea and many grasses". Ripley & Barney encountered it in short moist turf of mountain parks in the coniferous belt of Durango, Mexico.

Pringle 6146 in some herbaria is a mixture with E. bilobatum Morong, while Arsène 5532 is a mixture with something in the Cyperaceae.

Additional & emended citations: MEXICO: Chiapas: Breedlove & Raven 13416 (Ac). Durango: Ripley & Barney 13983 (Ac). Jalisco: Barnes & Land 159 (F-356912); Feddema 2295 (M1); R. McVaugh 13106 (M1), 13651 (M1), 17578a (M1); Pringle 6146, in part (Br, Ca-115172, Dt, Mm-7957, Ms-15474, Mu-353, S, S). Michoacán: Arsène 5532, in part (W-1000073, Z). Veracruz: Schiede 967 (B-type). Zacatecas: Feddema 2482 (M1).

ERIOCAULON SCHIMPERI Körn.

Additional & emended synonymy: Eriocaulon schimperianum Körn. apud Ruhl. in Engl., Pflanzenreich 13 (4-30): 77 & 287. 1903. Eriocaulon congensense Moldenke, Phytologia 2: 218-219. 1947. Eriocaulon volkensis var. mildbraedii Ruhl. ex Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 206, nom. nud. 1949. Eriocaulon montanum Körn. ex Moldenke, Résumé Suppl. 1: 17, in syn. 1959 [not E. montanum Van Royen, 1959].

Bibliography: Engl., Abh. Preuss. Akad. Wiss. [Abh.

Akad. Wiss. Berlin] 1891: 154. 1892; Ruhl. in Engl., Bot. Jahrb. 27: 80. 1899; N. E. Br. in Thiselet.-Dyer, Fl. Trop. Afr. 8: 243. 1901; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 1, 158. 1902; Ruhl. in Engl., Pflanzenreich 13 (4-30): 62, 77, & 287. 1903; Bullock, Kew Bull. Misc. Inf. 1932: 507. 1932; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 2, 158. 1941; J. Hutchinson, Botanist South. Afr. 528. 1946; Moldenke, Known Geogr. Distrib. Erioc. 20 & 39. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 110, 115-117, & 206. 1949; Moldenke, Phytologia 3: 333 & 344. 1950; E. J. Salisb., Ind. Kew. Suppl. 11: 88. 1953; Robyns & Tournay, Fl. Sperm. Parc Nat. Alb. 3: 314-315. 1955; Moldenke, Résumé 135, 142-144, 287, 292, 426, & 483. 1959; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 3, 158. 1959; Moldenke, Résumé Suppl. 1: 10, 15, 17, & 18 (1959) and 16: 8. 1968; M. E. S. Morrison, Journ. Ecol. [Brit.] 56: 373. 1968; Moldenke, Phytologia 18: 91 & 303. 1969.

It should be noted here that the original publication of this binomial was without description; therefore the correct citation for it is "Körn. ex Engl., Abh. Preuss. Akad. Wiss. [Abh. Akad. Wiss. Berlin] 1891: 154, nom. nud. (1892); Ruhl. in Engl., Bot. Jahrb. 27: 80. 1899". The type, Schimper 1217, deposited in the herbarium of the Botanisches Museum at Berlin, is also the type of Körnicke's E. montanum, a name which he apparently never published. Mildbraed 1690, in the same herbarium, is the type of E. volkensis var. mildbraedii Ruhl.

This species has been found by collectors in boggy ground, mountain swamps, and shallow rivers, at altitudes of 1800 to 3500 meters, flowering and fruiting in January and October. Schlieben 55 & 3487 have very small and narrow leaves, while 1135a has them large and broad. Bullock (1932) avers that the species is related to E. friesiorum Bullock. Robinson calls it an erect annual, with fresh-green rather succulent leaves. Morrison (1968) records it from Uganda.

Robyns & Tournay (1955) cite Burt 2799, DeWitte 1985 & 1988, Humbert 8677, and Mildbraed 1690 from the Albert National Park. Hutchinson (1946) cites his no. 4033. The Stuhlmann 9143, distributed as E. schimperi, is actually the type collection of E. mesanthemoides Ruhl., but my friend and colleague, Edgar Milne-Redhead, regards these two taxa as conspecific.

Additional citations: ETHIOPIA: Herb. Mus. Bot. Berol. s.n. (B); Schimper 1217 (B-type, V-isotype). DEMOCRATIC REPUBLIC OF CONGO: DeWitte 1985 (S, S), 1988 (S); Humbert 8099 (B). BURUNDI: Lewalle 1420 (Ac), 2337 (Rf). RWANDA: Humbert 8677 (B); Mildbraed 1690 (B, Z). TANZANIA: Tanganyika: Mildbraed 978 (B); Schlieben 55 (B), 1135a (B), 3487 (B, Mu, S). ZAMBIA: E. A. Robinson 3967 (Mu). MALAWI: Brass 17232 (N); E. A. Robinson 3032 (Mu).

ERIOCAULON SCHIMPERI var. GIGAS Moldenke

Bibliography: Moldenke, Phytologia 2: 364. 1947; Moldenke, Known

Geogr. Distrib. Verbenac., [ed. 2], 118 & 206. 1949; Moldenke, Phytologia 3: 344. 1950; Moldenke, Résumé 146 & 483. 1959.

ERIOCAULON SCHIPPPII Standl.

Synonymy: Eriocaulon schippii (Standl.) Moldenke apud H. Hess, Bericht. Schweiz. Bot. Gesell. 65: 126 & 128. 1955.

Bibliography: Standl. in Standl. & Record, Field Mus. Publ. Bot. 12: 90. 1936; Moldenke, M. Am. Fl. 19 (1): 20 & 34. 1937; Moldenke, Phytologia 1: 323. 1939; Moldenke, Carnegie Inst. Wash. Publ. 522: 142. 1940; Moldenke, Known Geogr. Distrib. Erioc. 4 & 39. 1946; Hill & Salisb., Ind. Kew. Suppl. 10: 86. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 36 & 206. 1949; H. Hess, Bericht. Schweiz. Bot. Gesell. 65: 126—130, fig. 2, & pl. 7, fig. 1—5. 1955; Moldenke, Résumé 43, 147, 292, & 483. 1959; Moldenke, Phytologia 18: 243 & 280. 1969.

Illustrations: H. Hess, Bericht. Schweiz. Bot. Gesell. 65: 127, fig. 2, & pl. 7, fig. 1 & 3. 1955.

Hess (1955) adopts the name, E. schippii, for Angolan material which is more probably referable to the African counterpart of this American species, E. bifistulosum Van Heurck & Muell.-Arg. I would be very much surprised to find the American plant in Angola. He gives very detailed so-called "amplified" descriptions of E. schippii which, he says, are taken entirely from the type collection (Schipp 647) from British Honduras. He is very emphatic in his statement that he regards the British Honduran and Angolan material as conspecific. "Standley hat 1936 die Art nur als nomen publiziert.....Von Moldenke (1937) stammt eine gültige und ausführliche Diagnose. Zum Vergleich stand mir aus dem Botanischen Museum der Universität Zürich ein Bogen Cotypus-Material zur Verfügung, gesammelt von W. A. Schipp, am 11.9.1930, unter Nr. 647 in All Pines, British Honduras. Davon würden ungefähr 30 Blüten aus verschiedenen Köpfen untersucht und ausgemessen. In verschiedenen Punkten erfasst die Diagnose von Moldenke die Variationsbreite der Merkmale nicht. Um die einzigen Exemplare aus Angola vergleichen zu können, muss die Diagnose von Eriocaulon Schippii eingehend diskutiert werden....Habituell stimmen die Pflanzen aus Angola mit dem Cotypus-Material von Eriocaulon Schippii vollständig überein. Die Halme sind aber etwas feiner als bei der Pflanze aus Honduras; sie sind 0,4—0,5 mm dick. Die Scheiden der Halme weisen nicht regelmässig zwei Zipfel auf. Sie sind oft nur schief abgeschnitten und aufgeschlitzt. Unter der dem Halm meist anliegenden häutigen Spitze sind die Scheiden oft etwas aufgeblasen. Das Cotypus-Material von E. Schippii reicht nicht aus, um sichere Unterschiede an den Scheiden finden zu können. Die Köpfe stimmen in Form und Grösze überein. Es ist wichtig, dass nur Blütenköpfe, die sich im gleichen Entwicklungsstadium befinden, miteinander verglichen werden. Im allgemeinen ist die Farbe der Blütenköpfe am afrikanischen Material etwas heller als an den Pflanzen aus Honduras. In der Grösze, Form und Farbe der Hüll- und Blüten-Brakteen sind aber keine Unterschiede fest

zustellen....Die Vergleiche zeigen, dass zwischen Eriocaulon Schippii aus British Honduras und den Pflanzen aus Angola kleine Unterschiede bestehen. Diese sind aber nur graduell, und es besteht bei keinem Merkmal ein deutlicher Hiatus. Der Unterschied in den Sepalen der ♀ Blüten, wie er in der Aufnahme (Taf. 7, Abb. 1, 2) klar zum Ausdruck kommt, kann nach Untersuchung vieler Blüten von verschiedenen Pflanzen nicht mehr als trennendes Merkmal gelten."

Hess cites only Hess 52/837 from Benguela, Angola, collected about 8 km. east of Vila Mariano Machado (Ganda), alongside the road to Nova Lisboa, at about 1200 meters altitude, on February 26, 1952. He notes that "In einem ausgedehnten Sumpf, auf sandig-moorigem Boden, in langsam fließendem, etwa 5 cm tiefen Wasser ist Eriocaulon Schippii häufig. Als Begleiter sind E. pictum Fritsch und E. Teusczii Engl. et Ruhl. zu nennen....Das Material ist einheitlich." He continues "Bisher war Eriocaulon Schippii nur durch das von W. A. Schipp gesammelte, eingangs zitierte Material aus British Honduras bekannt. Das Vorkommen dieser Pflanze in Süden von Angola ist pflanzengeographisch interessant. Es ist dies ein neuer Hinweis auf ein altes afrikanisch-amerikanisches Florenareal....Eriocaulon Schippii steht der in Pakistan, Indien, Ceylon und Australien verbreiteten E. setaceum L. nahe. E. setaceum hat aber behaarte Sepalen und Petalen in den ♀ Blüten. Eriocaulon Schippii ist auch mit E. bifistulosum van Heurck et Müll. Arg. nahe verwandt. E. bifistulosum hat aber stets kahle Brakteen, Sepalen und Petalen; zudem sind die Pflanzen immer viel grösser und haben auch grössere Blütenköpfe. Eriocaulon submersum Welw. ex Rendle kann trotz gewissen habituellem Ähnlichkeiten und den übereinstimmenden Ansprüchen an den Standort nicht als verwandt mit E. Schippii angesehen werden."

Additional & emended citations: BRITISH HONDURAS: Schipp 647 (B—isotype, Ca—426826—isotype, F—621912—isotype, S—isotype).

ERIOCAULON SCHLECHTERI Ruhl.

Bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 78. 1899; Ruhl. in Engl., Pflanzenreich 13 (4-30): 13, 103, 109, & 287. 1903; Thiselt.-Dyer, Ind. Kew. Suppl. 2: 70. 1904; Moldenke, Known Geogr. Distrib. Erioc. 22 & 39. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 120 & 206. 1949; Moldenke, Résumé 150 & 483. 1959.

Citations: MOZAMBIQUE: Gazaland: F. R. R. Schlechter 12093 (B—type, Z—isotype).

ERIOCAULON SCHOCHIANUM Hand.-Mazz.

Bibliography: Hand.-Mazz., Anz. Akad. Wiss. Wien 57: 238. 1920; A. W. Hill, Ind. Kew. Suppl. 6: 79. 1926; Hand.-Mazz., Symb. Sin. 7: 1245. 1936; Moldenke, Known Geogr. Distrib. Erioc. 25 & 39. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 132 & 206. 1949; Moldenke, Résumé 170 & 483. 1959; Moldenke,

Résumé Suppl. 17: 5. 1968.

ERIOCAULON SCHOCHIANUM var. PARVICEPS Hand.-Mazz.

Bibliography: Hand.-Mazz., Symb. Sin. 7: 1246. 1936; Moldenke, Résumé Suppl. 17: 5. 1968.

This variety is described from and is probably endemic to Yunnan, China.

ERIOCAULON SCHULTZII Benth.

Bibliography: Benth. & F. Muell., Fl. Austral. 7: 191, 195—196, & 792. 1878; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 879. 1893; Ruhl. in Engl., Pflanzenreich 13 (4-30): 66, 98, & 287. 1903; Moldenke, Known Geogr. Distrib. Erioc. 28 & 39. 1946; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 879. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 153 & 206. 1949; Moldenke, Résumé 209 & 483. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 879. 1960.

It is worth noting here that the isotype sheet of this species in the herbarium of the Botanisches Museum at Berlin bears a label inscribed "Adelaide. Rich. Schomburgk". Ruhl. (1903), however, gives the place of collection of the type as "Port Darwin" and the collector as Fred Schultz — in whose honor Benth. obviously named the species.

Citations: AUSTRALIAN REGION: AUSTRALIA: Northern Territory: F. Schultz 288 (B—isotype, Z—isotype).

ERIOCAULON SCHWEICKERDTI Moldenke

Bibliography: Moldenke, Phytologia 3: 416—417. 1951; G. Taylor, Ind. Kew. Suppl. 12: 55. 1959; Moldenke, Résumé 149 & 483. 1959.

Dr. H. Wild, in a letter to me dated January 10, 1953, states that the type locality for this species — along the Nyamshatu River, Untali District — is in Rhodesia, not in Natal as erroneously stated by me in my original publication (1951).

Citations: RHODESIA: Fisher & Schweickerd 234 [Govt. Herb. Salisbury 22824] (N—isotype, N—photo of type, Rh--22824—type, Z—photo of type).

ERIOCAULON SCLEROCEPHALUM Ruhl.

Synonymy: Eriocaulon sclerocephalum Ruhl. ex Moldenke, Phytologia 3: 385, in syn. 1950.

Bibliography: Ruhl. in Fedde, Repert. Spec. Nov. 22: 31. 1925; A. W. Hill, Ind. Kew. Suppl. 7: 89. 1929; Moldenke, N. Am. Fl. 19 (1): 19 & 26. 1937; Moldenke, Phytologia 1: 323. 1939; León, Fl. Cuba 1: 281. 1946; Moldenke, Known Geogr. Distrib. Erioc. 4 & 39. 1946; Alain, Contrib. Ocas. Mus. Hist. Nat. Coleg. La Salle 7: 47 & 114. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 43, 45, & 206. 1949; Moldenke, Phytologia 3: 385. 1950; Moldenke, Résumé 51, 53, 292, & 483. 1959; Moldenke, Phytologia 18: 243. 1969.

This species is known only from white sandy savannas, flower-

ing and fruiting in January, February, October, and November. The Carabia 1151, distributed as E. sclerocephalum and so cited by me in my 1950 work, is actually E. arenicola Britton & Small. Material of E. sclerocephalum, on the other hand, has been misidentified and distributed in herbaria as E. sigmoideum C. Wright.

Additional citations: CUBA: Pinar del Río: Ekman 10822 (S-cotype). ISLA DE PINOS: Britton, Britton, & Wilson 14948 (S); Ekman 11975 (S-cotype), 11990 (S-cotype), 12191 (N-photo of cotype, S-cotype, Z-photo of cotype); Killip 44754 (Mu, N, Z), 45361 (Mu), 45381 (Sm).

ERIOCAULON SEDGWICKII Fyson

Bibliography: Fyson, Journ. Indian Bot. 1: 50 (1919) and 2: 260-261, pl. 16. 1921; A. W. Hill, Ind. Kew. Suppl. 6: 79 (1926) and 7: 89. 1929; Moldenke, Known Geogr. Distrib. Erioc. 23 & 39. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 127 & 206. 1949; Moldenke, Résumé 162 & 483. 1959; Thanikaimoni, Pollen & Spores 7: 186. 1965.

Illustrations: Fyson, Journ. Indian Bot. 2: pl. 16. 1921.

Fyson (1921) bases this species on Sedgwick 4548, 4572, 4648, 4671, 4837, & 4847 "in Herb. Pres. Coll. Madras" and collected in "Bombay, Mahabaleshwar on hill sides, on rocks, etc." He comments that the species is "Remarkable for the very dense covering of white hairs on the floral bracts making the heads snow-white; and for the broad female petals and their large glands. In general appearance and in the broad female petals the plants are often very like plants of E. horsley-kundae Fyson, Var megaloccephala, No. 47, collected by Talbot and Meebold from the Bababoodans to the Nilgiris. The female petals are like also those of E. Geofreyi, E. Colletti, etc. where however the receptacle is glabrous. I cannot find anything in Ruhland's monograph to correspond with this and therefore suggest a new species."

Citations: INDIA: Bombay: L. J. Sedgwick 4648 (S-cotype, Z-cotype).

ERIOCAULON SEEMANNII Moldenke

Synonymy: Eriocaulon seemanii Moldenke apud L. O. Williams, Fieldiana Bot. 31: 256, sphalm. 1967.

Bibliography: Moldenke, N. Am. Fl. 19 (1): 19 & 28-29, 1937; Moldenke, Phytologia 1: 323. 1939; Moldenke in Woodson & Schery, Ann. Mo. Bot. Gard. 31: 66-67, fig. 95. 1944; Moldenke in Woodson & Schery, Fl. Panama 470-471, fig. 95. 1944; Moldenke, Known Geogr. Distrib. Erioc. 4 & 40. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 37, 41, & 206. 1946; Hill & Salisb., Ind. Kew. Suppl. 10: 86. 1947; Moldenke, Phytologia 3: 385. 1950; Moldenke, Résumé 44, 48, & 483. 1959; L. O. Williams, Fieldiana Bot. 31: 256. 1967; Moldenke, Résumé Suppl. 17: 10. 1968; Moldenke, Phytologia 18: 318. 1969.

Illustrations: Moldenke in Woodson & Schery, Ann. Mo. Bot.

Gard. 31: 66, fig. 95. 1944; Moldenke in Woodson & Schery, Fl. Panama 470, fig. 95. 1944.

The Swallen 11173, distributed as E. seemanni, is actually E. molinae L. O. Williams.

ERIOCAULON SEKIMOTOI Honda

Bibliography: Honda, Bot. Mag. Tokyo 45: 299. 1931; Nemoto, Fl. Jap. Suppl. 1040. 1936; A. W. Hill, Ind. Kew. Suppl. 9: 105. 1938; Honda, Nom. Pl. Jap. 463. 1939; Satake in Nakai & Honda, Nov. Fl. Jap. 6: 14, 75, 76, 81, & 87, fig. 40. 1940; Satake, Bull. Tokyo Sci. Mus. 4: [Rev. Jap. Erioc.] 63-64, pl. 11, fig. 22. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 134 & 206. 1949; Moldenke, Résumé 173 & 483. 1959; Koyama in Kitamura, Murata, & Koyama, Col. Illustr. Herb. Pl. Japan 3: 180, 181, & 430, fig. 123 (4). 1964;

Illustrations: Satake in Nakai & Honda, Nov. Fl. Jap. 6: 76, fig. 40. 1940; Satake, Bull. Tokyo Sci. Mus. 4: [Rev. Jap. Erioc.] pl. 11, fig. 22. 1940; Koyama in Kitamura, Murata, & Koyama, Col. Illustr. Herb. Pl. Japan 3: 180, fig. 123 (4). 1964.

This species is based on H. Sekimoto 3, collected at Kataokamura, in the province of Simotuke, Honshu, Japan, on September 18, 1930, deposited in the herbarium of the University of Tokyo, and is named in honor of the collector. It is known thus far only from the type collection. Vernacular names recorded for it are "imunohige-modoki" and "nise-imunohige".

ERIOCAULON SEKIMOTOI f. GLABRUM Satake

Bibliography: Satake in Nakai & Honda, Nov. Fl. Jap. 6: 77 & 87. 1940; Satake, Bull. Tokyo Sci. Mus. 4: [Rev. Jap. Erioc.] 64. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 134 & 206. 1949; Moldenke, Résumé 173 & 483. 1959.

This form differs from the typical form of the species in having the receptacle glabrous and the involucral bractlets as long as or slightly shorter than the flowering heads.

The form is based on H. Sekimoto s.n., collected on Mt. Takeyama, in the province of Simotuke, Honshu, Japan, sometime in 1931, and is probably deposited in the herbarium of the University of Tokyo. It is known thus far only from the type collection and the only vernacular name recorded for it is "yasyu-imunohige".

ERIOCAULON SELLOWIANUM Kunth

Synonymy: Eriocaulon brevifolium Mart. ex Körn. in Mart., Fl. Bras. 3 (1): 486, in syn. 1863 [not E. brevifolium Klotzsch, 1848, nor Raf., 1840]. Eriocaulon sellowianum var. α Körn. in Mart., Fl. Bras. 3 (1): 486. 1863. Eriocaulon sellowianum var. ϕ Körn. in Mart., Fl. Bras. 3 (1): 486. 1863. Eriocaulon sellowianum Kunth apud Alv. Silv., Fl. Mont. 1: 398. 1928. Eriocaulon sellowianum Kunth apud Angely, Fl. Paran. 16: 51, sphalm. 1960. Eriocaulon sellowiana Kunth ex Moldenke, Résumé Suppl. 3: 32, in syn. 1962.

Additional & amended bibliography: Kunth, Enum. Fl. 3: 545 & 546. 1841; Schlecht., Limnaea 18: 434. 1844; C. Müll. in Walp., Ann. 5: 930 (1860) and 6: 1171. 1861; Körn. in Mart., Fl. Bras. 3 (1): 476, 483, 485—486, & 493, pl. 61, fig. 2. 1863; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 877. 1893; Ruhl. in Engl., Pflanzenreich 13 (4-30): 42, 46, 51, 117, 285, & 287. 1903; Alv. Silv., Fl. Mont. 1: 398. 1928; Stapf, Ind. Lond. 3: 91. 1930; Castell. in Descole, Gen. & Sp. Fl. Argent. 3: 70—72, 75, 81, 85—86, & [103], pl. 16 & 21. 1945; Moldenke, Known Geogr. Distrib. Erioc. 8, 19, 33, & 40. 1946; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 877. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 77, 98, 103, & 206. 1949; Moldenke, Phytologia 3: 385. 1950; Angely, Fl. Paran. 10: 5 & 14. 1957; Moldenke, Résumé 89, 116, 123, 218, 286, 292, & 483. 1959; Moldenke, Résumé Suppl. 1: 18. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 877. 1960; Angely, Fl. Paran. 16: 51 (1960) and 17: 24. 1961; Moldenke, Résumé Suppl. 3: 32 (1962) and 8: 2. 1964; Angely, Bibl. Veg. Paran. 196. 1964; Angely, Fl. Anal. Paran., ed. 1, 199. 1965; Moldenke, Résumé Suppl. 13: 3 (1966) and 17: 10. 1968; Moldenke, Phytologia 17: 452 (1968) and 18: 249, 250, 358, & 376. 1969.

Additional illustrations: Körn. in Mart., Fl. Bras. 3 (1): pl. 61, fig. 2. 1863.

The type of this species was collected by Friedrich Sellow (no. 5137) — in whose honor it was named — somewhere in Brazil and is deposited in the herbarium of the Botanisches Museum at Berlin. Sellow s.n. [*Brasilia meridionalis*], in the same herbarium, is a cotype of E. sellowiana var. ♀ of Körnicke; E. brevifolium Mart. is based on Herb. Martius 881, deposited in the herbarium of the Staatssammlung at Munich. Eriocaulon brevifolium Klotzsch is a synonym of what is now called E. klotzschii Moldenke, while E. brevifolium Raf. is E. pellucidum Michx.

It should be mentioned here that Ruhland's monograph (1903) is erroneously dated "1902" by me in my 1950 installment of these notes. In previous publications I recorded E. sellowianum Kunth from Paraguay, but it is possible that all the Paraguayan material will prove to be var. longifolium Moldenke.

Glaziou 20531 has remarkably large and showy flower-heads and does not match well most of the other material seen by me, but it is cited by Ruhland (1903). Two of the Clausen 49 sheets in the Brussels herbarium were originally labeled "47", but this number was apparently later crossed out and "49" substituted. Dusén 7212 is a mixture with Leiothrix flavescens (Bong.) Ruhl., while Widgren 164 is a mixture with E. obtusum Ruhl. Whether this last-mentioned collection was really made from cultivated material is not certain, but one of the labels is inscribed "in hort. bot."

Eriocaulon sellowianum has been found growing in bogs and on campos, at altitudes of 900 to 1200 meters, flowering and fruit-

ing in December and February. Silveira (1928) cites A. Silveira 200 from Minas Gerais. Material has been misidentified and distributed in herbaria as Paepalanthus falcifolius Körn. and P. tessmannii Moldenke. On the other hand, the Hassler 4270, 8885, & 9425, distributed as E. sellowianum, are var. longifolium Moldenke, P. Clausen s.n. [1845] and Lindman A.3055 are E. obtusum Ruhl., and Luetzelburg 6787a is E. paranense Moldenke.

Additional citations: BRAZIL: Brasília: Héring 6779 (Z). Goiás: Glaziou 20531 (Br, S); Weddell 1628 (Br, N—photo, Z—photo). Minas Gerais: P. Clausen 49 (Br, Br, Br, Br, N), 198 (Br, N); Schwacke 9927 (B), 9977 (B); Stephan s.n. [Congonhas do Campo, 1843] (Br, Br, N—photo, Z—photo); Widgren 330 (Br), 820 [1845] (S, S, W—937188), s.n. (S). Paraná: Dombrowski 82 (Rf), 1265 [Saito 1080; Herb. Inst. Def. Pat. Nat. 9452] (Ac), 2240 [Kuniyoshi 1983] (Ac); Dusén 2302 (S), 2716 (S), 7212, in part (S), s.n. [24.2.1904] (S); Hatschbach 1191 (N), 2057 (N); Mattos 4412 (N); Reitz & Klein 17469 (Ac); Smith & Klein 14932 (W—2451605); Tessmann 3649 (N). Santa Catarina: Reitz 5281 (N); Smith & Klein 13632 (Ac), 13784 (Ac, N). São Paulo: L. Riedel 2301 (B, B, Mu—235, S, Ut—333). State undetermined: Collector undetermined 42 [Herb. Martius 881] (B, Br, M, Mu—233, N, N—photo, Z—photo); J. F. T. Müller 150 (P), 200 (P); J. E. Pohl s.n. [Brasília] (Mu—234); Sellow 5137 (B—type, Br—isotype, N—photo of isotype, Z—photo of isotype), s.n. [Brasília meridionalis] (B, B); Weddell 2702 [Amaroleite] (Br). ARGENTINA: Corrientes: Pedersen 813 (W—2122570). CULTIVATED: Brazil: Widgren 164, in part (S, S). MOUNTED ILLUSTRATIONS: drawings & notes by Körnigke (B, B).

ERIOCAULON SELLOWIANUM var. LONGIFOLIUM Moldenke

Synonymy: Eriocaulon sellowianum var. longifolium Moldenke apud Angely, Fl. Paran. 16: 51, sphalm. 1960.

Bibliography: Moldenke, Phytologia 3: 417. 1951; Angely, Fl. Paran. 10: 14. 1957; Moldenke, Résumé 89, 116, & 483. 1959; Angely, Fl. Paran. 16: 51 (1960) and 17: 24. 1961; Moldenke, Résumé Suppl. 3: 32. 1962; Angely, Bibl. Veg. Paran. 196. 1964; Angely, Fl. Anal. Paran., ed. 1, 199. 1965.

This plant has been collected in swamps and other wet places, flowering and fruiting in April, August, September, and November. Angely & Mattos describe it as "local", with clear-white flowering heads. Material has been misidentified and distributed in herbaria under the designations E. sellowiana Kunth and E. sellowianum Kunth.

Citations: BRAZIL: Goiás: Weddell 2138 (Br—type, N—photo of type, Z—photo of type). Paraná: Angely & Mattos 3774 (Ca—1447391); Dusén 2716 (S), 11094 (S, S), s.n. [24.11.1910] (S). State undetermined: Sellow s.n. (Br). PARAGUAY: Hassler 4270

(Ca—934842, Mi, N, S), 8885 (Ca—930101), 9425 (Ca—930105, S, W—2055378).

ERIOCAULON SENEGALENSE N. E. Br.

Bibliography: N. E. Br. in *Thiselt.-Dyer*, *Fl. Trop. Afr.* 8: 251. 1901; Ruhl. in *Engl.*, *Pflanzenreich* 13 (4-30): 103, 106, & 287. 1903; Prain, *Ind. Kew. Suppl.* 3: 70. 1908; H. Lecomte, *Bull. Soc. Bot. France* 55: 647. 1909; Moldenke, *Known Geogr. Distrib. Erioc.* 20 & 40. 1946; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 2], 111 & 206. 1949; Moldenke, *Résumé* 135 & 483. 1959.

ERIOCAULON SENILE Honda

Bibliography: Honda, *Bot. Mag. Tokyo* 42: 507. 1928; Mayebara, *Fl. Austr.-higo.* 77. 1931; Mak. & Nemoto, *Fl. Jap.*, ed. 2, 1514. 1931; A. W. Hill, *Ind. Kew. Suppl.* 8: 87. 1933; Nemoto, *Suppl. Fl. Jap.* 1040. 1936; Honda, *Nom. Pl. Jap.* 463. 1939; Satake in Nakai & Honda, *Nov. Fl. Jap.* 6: 6, 12, 31, 32, 78, & 87, fig. 11 & 12. 1940; Satake, *Bull. Tokyo Sci. Mus.* 4: [Rev. *Jap. Erioc.*] 22--23, pl. 3, fig. 5. 1940; Moldenke, *Known Geogr. Distrib. Erioc.* 25 & 40. 1946; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 2], 134 & 206. 1949; Moldenke, *Résumé* 173 & 483. 1959; Moldenke, *Résumé Suppl.* 3: 18 & 21. 1962; Koyama in Kitamura, Murata, & Koyama, *Col. Illustr. Herb. Pl. Japan* 3: 179, 180, & 430, fig. 122 (2). 1964; Moldenke, *Résumé Suppl.* 12: 8 & 10. 1965; Thanikaimoni, *Pollen & Spores* 7: 182. 1965.

Illustrations: Satake in Nakai & Honda, *Nov. Fl. Jap.* 6: 6 & 32, fig. 11 & 12. 1940; Satake, *Bull. Tokyo Sci. Mus.* 4: [Rev. *Jap. Erioc.*] pl. 3, fig. 5. 1940; Koyama in Kitamura, Murata, & Koyama, *Col. Illustr. Herb. Pl. Japan* 3: fig. 122 (2). 1964.

This species is based on *K. Mayebara* 27, collected at Nisize, in the province of Higo, Kyushu, Japan, in October, 1924, deposited in the herbarium of Tokyo University. The only common name recorded for it is "gomasio-hosikusa". Satake (1940) says "The present species is distinguished from *E. parvum* Kcke. in having broader leaves with very obtuse and callose apex, and the male calyces deeply 3-lobed." He cites: JAPAN: Honshu: Collector undetermined s.n. [Nobe-mura, 1890]; Itô s.n. [Oct. 1893]. Kyushu: Doi 60 & 61; Kōzuma 23129; Masamune s.n. [Kagosima]; Mayebara 27, 136, & 157; Nakano 23447; Tasiro 28774, s.n. [Nov. 1916], & s.n. [Oct. 1919]; Yasukawa s.n. [Kawanabe]. Shikoku: Watanabe s.n. [Sept. 1894]. RYUKYU ISLAND ARCHIPELAGO: SATSUNAN ISLANDS: Tanegashima: Tasiro s.n. [Oct. 1921].

Citations: WESTERN PACIFIC ISLANDS: JAPAN: Kyushu: Massamune s. n. [Ohsumi, Oct. 23, 1922] (N); Sakata "A" (Z).

ERIOCAULON SENILE f. **PILOSUM** Koyama

Bibliography: Moldenke, *Résumé Suppl.* 12: 8 & 10. 1965.

Citations: WESTERN PACIFIC ISLANDS: JAPAN: Kyushu: Sakata "B" (Z—*isotype*).

ERIOCAULON SEPTANGULARE With.

Additional & emended synonymy: Cespa aquatica Hill, Herb. Brit. 1: pl. 55 [some copies]. 1769. Eriocaulon decangulare Hope, Phil. Trans. Roy. Soc. Lond. 59: 243, pl. 12. 1770 [not E. decangulare L., 1753, nor Michx., 1959, nor Walt., 1788, nor Willd., 1841]. Eriocaulon decangulare Lightf., Fl. Scot., ed. 1, 569—570. 1777. Nasmythia articulata Huds., Fl. Angl., ed. 2, 1: 415. 1778. Eriocaulon decangulare Hill, Brit. Fl. 29. 1799. Eriocaulon decangulare Hull apud J. E. Sm. in Sowerby, Engl. Bot. 11: pl. 733, in syn. 1800. Nasmythia septangularis Mart., Nov. Act. Physico-med. Acad. Caes. Leopold.-Carol. Nat. Cur. 17 (1): 58, pl. 2, fig. 2. 1835. Eriocaulon articulatum (Huds.) Morong, Bull. Torr. Bot. Club 18: 353. 1891. Eriocaulon articulatum Morong apud Durand & Jacks., Ind. Kew. Suppl. 1, pr. 1, 158. 1902. Eriocaulon aquaticum (Hill) Druce, Pharmaceut. Journ. [London] 83 [ser. 4, 29]: 700. 1909 [not E. aquaticum Sagot, 1863]. Eriocaulon aquaticum Druce apud Prain, Ind. Kew. Suppl. 4, pr. 1, 82, in syn. 1913. Eriocaulon decangulare Huds. ex Moldenke, Résumé Suppl. 1: 17, in syn. 1959. Eriocaulon septemangulare Turner ex Moldenke, Résumé Suppl. 1: 18, in syn. 1959 [not E. septemangulare Auct., in herb.]. Eriocaulon septangulare With. ex Moldenke, Résumé Suppl. 3: 31, in syn. 1962.

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It should be noted here that the E. decangulare L., referred to in the synonymy above, is a valid species, with E. decangulare Michx. as a synonym, but the homonym accredited to Walter is E. compressum Lam. and that accredited to Willdenow is E. humboldtii Kunth; the "E. septangulare Auct." is a synonym of E. pellucidum Michx. In the bibliography above I have included not only references to the true E. septangulare of the Old World, but also to E. pellucidum, of the New World, since these two taxa are regarded as conspecific by so many workers. The Stone (1912) reference is often cited as "1911", but was not actually issued until January 26, 1912; the illustration is of E. pellucidum. The illustrations in Smith's work (1910) and in Creevey (1912) are also of E. pellucidum. The Erlandsson reference is often cited as "1940", but the page in question was not actually issued until February 25, 1942. The illustration given by Manning (1965) appears to be a combination of an Eriocaulon plant with the flower-head of an Eriophorum.